

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII**

In the Matter of the Application of)	
)	
HAWAII ELECTRIC LIGHT COMPANY, INC.)	Docket No. 05-0315
)	
For Approval of Rate Increases and)	
Revised Rate Schedules and Rules.)	
<hr/>)	

**RESPONSES TO
CONSUMER ADVOCATE
INFORMATION REQUESTS**

BOOK 6 OF 7

January 12, 2007

CA-IR-391

Ref: HELCO-206 vs. Monthly PUC Reports; Customer Forecast.

At HELCO-206, the test year forecasted number of Schedule P Large Power customers was 61, while at June of 2006 HELCO reported an actual number of customers of 64. Please provide the following information:

- a. Explain any issues with respect to the validity of comparing these two values, since the HELCO-206 value is an average for the entire year 2006, while as of June (the mid-point of 2006) actual customer counts appear to be significantly above the forecast.
- b. State all reasons why/if HELCO objects to an upward adjustment of the large power customer count and sales volumes to recognize the favorable actual versus forecast variance as of June 2006 or at some later date.
- c. Provide monthly actual KWH sales volumes for each Schedule P customer for January through August 2006 and compare such values to the 238.1 GWH forecasted sales (by customer as available) in HELCO-201, page 2.
- d. Given your response to parts (b) and (c) of this information request, please explain whether any further adjustment to test year Schedule P sales volumes is appropriate and provide calculations to support any such adjustment(s).

HELCO Response:

- a. Comparing the HELCO-206 commercial customer count, which is an average for the entire year 2006, with the June 2006 actual customer count, which is a number from one point in time, is not a useful comparison as it is comparing apples and oranges. A more useful comparison would be a comparison of the HELCO-206 average commercial customer count with 12 month average ending with the month of June 2006.
- b. If the question is whether HELCO objects to the Consumer Advocate proposing an upward adjustment of the large power customer count, HELCO does not object to the Consumer Advocate proposing what the Consumer Advocate believes is appropriate. HELCO will give every consideration to what the Consumer Advocate proposes. However, HELCO will oppose the Consumer Advocate's proposed adjustment if HELCO does not agree with the proposed adjustment. If the question is whether HELCO intends to update its test year customer counts

and energy sales to reflect recorded year to date 2006 customer and energy sales amounts in its rebuttal testimony, HELCO does not intend to update its test year customer count and energy sales test year estimates in its rebuttal testimony at this time. If the question is whether HELCO is willing to discuss a stipulated agreement for customer count for the large power customer count and energy sales, HELCO is willing to discuss a stipulated agreement for the customer count and energy sales for all rate schedules and in total. Recorded year-to-date customer counts and energy sales may not be appropriate for ratemaking purposes due to abnormal events and/or circumstances. For example, for ratemaking purposes, energy sales could be weather-normalized to reflect lower/higher than normal cooling-degree-days.

c. YTD KWH sales for January through October 2006 for each Schedule P account are on pages 3 and 4. Total YTD sales in Schedule P as of October 2006 are 206.0 GWH, versus the forecast for the entire year 2006 of 238.1 GWH. HELCO does not produce monthly forecasts for individual accounts. Sales for the remaining two months of the year depend upon a number of variables, for example: (1) weather, particularly the number of cooling degree-days and the average humidity; (2) the amount of rainfall; (3) fluctuations in economic activity, such as hotel occupancy.

d. HELCO does not plan to adjust test year sales for Schedule P.

Account Name	Acct No	October, 2006 YTD KWH Sales
Four Seasons Resort Hualalai	9600-1396-002	9,482,400
Hapuna Beach Prince Hotel	9300-8320-002	7,942,800
Mauna Kea Beach Hotel	0200-3433-001	6,557,400
Fairmont Orchid Hawaii	8601-4355-003	9,290,400
Mauna Lani Bay Hotel	8601-4182-002	5,214,000
Hilton Waikoloa Village	8601-4010-003	19,756,800
Waikoloa Beach Marriott	8601-4019-005	4,359,600
Hotel King Kamehameha	8604-1463-002	4,358,400
Royal Kona Resort	8604-1603-001	3,309,600
Royal Seacliff AOA	8604-0781-002	1,357,440
Outrigger Keauhou Beach Resort	8604-4912-011	2,754,000
Sheraton Keauhou Bay Resort	8604-7940-005	4,669,200
Nanihoa Volcanoes Resort	8603-9185-004	2,497,200
Hilo Hawaiian Hotel	8603-9158-002	2,088,000
Hilo Lagoon Centre	8603-9135-002	2,542,080
Shanghai Investment Co Inc Waiakea Villas	8603-9658-010	1,303,200
North Hawaii Community Hospital	9500-6155-002	2,800,600
SH Dept of Health - Hilo Medical Ctr	8603-4192-002	1,402,800
Hale Hoola Hamakua	9400-6479-001	1,576,200
SH UH Hilo Bus Off	9900-2035-002	7,295,400
Subaru Telescope	9400-6704-003	2,530,800
WM Keck Observatory	8603-7421-001	2,622,400
SH DOT Airports Keahole	8600-1960-001	4,922,400
SH DOT Airports - Lyman Field	8604-3528-001	2,973,600
National Astronomical Observatory of Japan	9700-0596-005	3,089,600
Sure Save Super Mkt - Keaau	8601-8330-004	1,495,500
KTA Waikoloa	8602-0574-001	1,440,500
Kealakekua Ranch Ltd (Choice Mart)	8603-1939-005	1,063,920
Foodland Waimea	0200-1420-002	1,703,680
KTA Waimea	8602-7351-001	1,648,500
Foodland Super Market Ltd Kionoole	8603-3279-001	1,794,240
KTA Keauhou	8604-7506-001	1,712,500
Safeway Stores Hilo	8604-4025-002	1,873,200
Foodland Super Market Ltd Kahaopea	9300-3036-002	1,629,360
KTA Puainako	8604-9902-001	3,037,200
Foodland Super Market Ltd. Palani	8600-2744-001	1,935,840
KTA Kailua Kona	8600-2785-001	2,020,800
Safeway Stores Kona	9600-5280-002	3,003,600
Malama Market	0500-0767-003	1,024,560

<u>Account Name</u>	<u>Acct No</u>	<u>October, 2006 YTD KWH Sales</u>
KKVDG	8604-1577-001	1,966,080
Home Depot 8453 Hilo	0400-6770-002	2,283,600
Wal Mart Store Inc Hilo	9600-5272-003	2,944,600
K Mart Corp	9400-4752-003	2,121,000
Lowe's of Kona	0300-4082-002	3,075,200
Wal Mart Store Inc Kona	9500-2945-006	2,474,800
Costco Wholesale #140	9300-8928-001	4,209,600
Home Depot - 1704 Kona	0200-4190-002	2,408,400
Suisan Co Ltd - Super Jumbo	8603-9583-001	1,603,840
Hawaiian Telcom	8603-2713-002	1,609,200
Meadow Gold Dairies Inc	8604-4147-001	1,406,080
Big Island Country Club Estates	9500-4157-003	778,800
Waikoloa Water Co - Well #1	8602-0877-003	3,168,000
West Hawaii Water Co Waikoloa Well #3	9700-1556-001	1,971,600
CH Dept Public Works - Lyman Field	9200-3942-002	1,552,200
Cyanotech	9600-1535-001	2,521,600
Dept of Water Supply - Honokohau	9700-3277-002	4,586,600
Dept of Water Supply Hualalai	9700-4322-016	3,305,200
Dept of Water Supply - Keahuolu	9600-0931-004	368,000
Dept of Water Supply - Lalamilo	9700-0455-001	2,903,520
Dept of Water Supply Parker 1	9900-3314-002	2,601,000
Dept of Water Supply Parker 2	9800-2994-002	2,562,200
Dept of Water Supply - Halekii	9600-6187-006	2,524,600
Dept of Water Supply - Kahaluu Shaft	8604-7591-001	4,128,600
Dept of Water Supply - Kahaluu A/C	8605-0017-002	2,241,920
Dept of Water Supply - Panaewa	8605-4877-001	2,408,000
Directorate of Resource Mgmt - KMC	8602-3772-003	1,955,200

CA-IR-392

Ref: HELCO Response to CA-IR-248a; Updated Sales Levels.

In its response, HELCO states, "HELCO believes that the sales forecast provided in its written testimony HELCO T-2 should be utilized in this Docket, until actual 2006 sales data are available." Please respond to the following:

- a. State whether HELCO intends to update all forecasted sales data to replace the forecasted data in HELCO-201 and HELCO-207 with corresponding actual 2006 amounts.
- b. Explain the timing and process through which any planned updating of forecasted GWH sales, numbers of customers, and Electric Sales Revenues on HELCO-301 would be calculated and made available to the Consumer Advocate for analysis and responsive testimony (include dates of each planned activity).
- c. Provide in hard copy and Excel magnetic media all available information and calculations regarding the estimated impact upon HELCO's prefiled revenue requirement of all anticipated revisions or updates to test year sales volumes and customer levels.

HELCO Response:

- a. HELCO does not intend to replace forecasted sales data in the referenced exhibits with corresponding actual 2006 sales figures. Recorded annual customer counts and energy sales may not be appropriate for ratemaking purposes due to abnormal events and/or circumstances. For example, for ratemaking purposes, energy sales could be weather-normalized to reflect lower/higher than normal cooling-degree-days.
- b. See response to sub-part a.
- c. See response to sub-part a.

CA-IR-393

Ref: WP-404, Page 7, Station Summary.

- a. Please explain why the capacities of the following generating units are different between WP-404 and Exhibit 502. Please refer to the attached table HELCO Generating Unit Capacity Comparison that shows the capacity of all the HELCO generating units, purchased power, hydro and wind resources from witnesses Lisa Giang, T-4 (WP-404, Page 7) and Dan Giovanni, T-5 (HELCO 502, Age of Generating Units, Page 1).

Unit Name	WP 404	HELCO 502
	Net Dependable Capacity (MW)	Net Capacity
Shipman 3	6.7	6.8
Shipman 4	7.2	6.7
Hill 6	20.3	20.2
Puna Steam	14.0	14.1
Kanoelehua D11	2.0	2.5
Kanoelehua CT1	11.0	11.5
Keahole CT2	12.5	13.0
Puna CT3	20.0	20.4
Keahole CT4	20.0	22.1
Keahole CT5	20.5	22.2

- b. Please indicate the correct capacity for the above generating units.

HELCO Response:

- a. The capacities for the generating units shown in HELCO-WP-404, page 7 are the current test year values used in the Automatic Generation Control ("AGC"). As described in HELCO T-4, page 31, lines 4-17, the AGC limits are based on a range of output through which the machine can be operated predictably without reconfiguring the plant from normal operation and, in general, the AGC limits match the normal top load rating ("NTL") of the units. The capacities shown in HELCO-502 were the historical 2005 NTL ratings which were also provided in HELCO's 2006 Adequacy of Supply Report to the Commission (filed on February 3, 2006).

- b. The Kanoelehua D11 capacity in HELCO 502 was inadvertently listed as 2.5 MW and should have been 2.0 MW.

CA-IR-394

Ref: HELCO-WP-402, Page 2-3, Test Year Fuel Prices.

Please explain why the Hawaii Use Tax is not applied to fuel purchased from Tesoro Hawaiian Corporation?

HELCO Response:

The Hawaii Use Tax for fuel purchased from Tesoro Hawaiian Corporation ("THC") is included in the "PER BARREL ADDER" shown on HELCO-WP-402, pages 2-3 as indicated in THC's contract. Please refer to HELCO response to CA-IR-33, pages 61-64, and 74-80 for excerpts from THC's contract.

CA-IR-395

Ref: HELCO-WP-402, Page 2-3, Test Year Fuel Prices.

Please provide the fuel costs for the Kanoelehua D11, D15, D16, D17 and CT1 units, including the base fuel prices, ocean transportation costs, land transportation costs, storage costs, wharfage, all applicable taxes and all applicable costs as similar to other units in the referenced workpaper.

HELCO Response:

The costs referenced above for Kanoelehua D11, D15, D16, D17 and CT1 are shown on

HELCO-WP-402, page 2, the two columns on the right under "DIESEL FUEL" for "HILL PP".

CA-IR-396

Ref: HELCO-WP-402, Page 2-3, Test Year Fuel Prices.

Please provide the fuel costs for the Panaewa, Ouli, Kapua, Punaluu units including the base fuel prices, ocean transportation costs, land transportation costs, storage costs, wharfage, all applicable taxes and all applicable costs as similar to other units in the referenced workpaper.

HELCO Response:

As explained in HELCO T-4, page 18, lines 11-14, and shown on HELCO-WP-402, page 1, the fuel cost for the Panaewa, Ouli, Kapua, and Punaluu units is based on the market price of the local supplier, Hawaii Petroleum, Inc. The fuel cost includes the trucking of the fuel to HELCO's facilities. The fuel cost changes frequently throughout the year since it is tied to the market price of fuel. HELCO is currently working on a fuel contract with Hawaii Petroleum, Inc.

CA-IR-397

Ref: WP-404, Page 7, Station Summary.

“Helcohyd” is a unit included in the station summary.

- a. Is this an individual unit or a combination of HELCO’s hydro-electric generating units?
- b. If so, please provide the detailed information for each unit as shown in WP 404, Page 7, Station Summary.

HELCO Response:

- a. “Helcohyd” is a combination of all of HELCO’s hydro-electric generating units at Puueo and Waiau.
- b. The detailed generation assumption for Puueo Hydro is shown on HELCO-WP-404, page 104. The detailed generation assumption for Waiau Hydro is shown on HELCO-WP-404, page 105. The total generation assumed for the HELCO hydro units (Puueo and Waiau) are also shown on HELCO-WP-404, page 105 and match the generation shown on HELCO-WP-404, page 7, Station Summary.

CA-IR-398

Ref: CA-IR-39 Ref: HELCO 403, and WP 403, Page 3.

- a. Please identify the tables that are referred to as "Demand loss versus system load tables" in the response to the referenced IR in the fourth line of the second bulleted paragraph.
- b. Please identify and explain the column titles shown in the tables, HELCO_loss calc data_2006.xls, pages 2 through 6.
- c. Please explain why distribution losses including distribution feeder, distribution transformer and secondary components of distribution losses, would be the same in 2005 as in 1993.
- d. The purpose and scope of the system loss analysis, HELCO System Loss Analysis, Dated July 1993, as prepared by Transmission & Distribution Planning Department, Hawaiian Electric Company, Inc., page 1, line 5 indicates, "The year 1995 is included since this study assumed that combustion turbine #4 (CT4) and combustion turbine #5 (CT5) would be placed in service by December 1995." Has a system loss analysis been prepared since 1993 to reflect actual system losses with CT4 and CT5 in operation? If not, why are system losses from a 13-year-old analysis appropriate and accurate for use in a 2006 Test Year?

HELCO Response:

- a. The "Demand loss versus system load tables" are on pages 5 and 6 of CA-IR-39.
- b. The columns are (counting from left to right and including blanks):

Column	Label	Description
1	LF LdSvd	Customer demand
2	Hours	Number of hours
3	<Intentionally left blank>	
4	ActEnSvd	Customer demand (energy)
5	<Intentionally left blank>	
6	Dist/Sec	Distribution and secondary energy losses

Column	Label	Description
7-12	Seg 1 – 6	HELCO generator step-up transformer energy losses; Note that the seven load flow points allows for six interpolation segments
13	HE GSU	Sum of Segments 1 – 6
14-19	Seg 1 – 6	Transmission energy losses; the seven load flow points allows for six interpolation segments
20	Trans	Sum of Segments 1 – 6

- c. Distribution feeder losses, distribution transformer losses, and distribution secondary component distribution losses for 2006 were assumed to be the same percentage of total distribution losses as was calculated in the HELCO System Loss Analysis, dated July 1993. Other results of the HELCO System Loss Analysis, dated July 1993, such as total distribution losses and transmission losses were not used in HELCO-WP-403, page 3 or in the load flows run to determine values derived for HELCO-WP-403, page 3. The breakdown of the components of distribution losses (as a percentage of total distribution losses) is likely to remain relatively constant due to the impact between increasing load levels on existing distribution circuits being offset by the impact of additions of new or upgrades to existing circuits and their components.
- d. Analysis was done on load flow simulations to estimate the generator step-up, transmission, and total distribution/secondary losses. Page 3 of HELCO-WP-403 shows the following losses: generator step-up (row B), transmission (row C), and distribution (sum of rows F – distribution transformer losses, G – distribution losses, H – secondary transformer losses,

and I – secondary losses). These load flow simulations took into account the estimated 2006 operation of Keahole CT4 and CT5. As mentioned in part c. above, the results of the HELCO System Loss Analysis, dated July 1993 were utilized only in calculating the components of distribution and secondary losses.

CA-IR-399

Ref: HELCO Response to CA-IR-49, Attachment 14; GAM Projects.

Please provide the following cost information associated with the Generation Asset Management program:

- a. Actual capital spending and expensed LABOR costs by GAM project and by RA for each listed unit, broken down annually for each year 2002 through 2005 and 2006 to-date (through August).
- b. Actual capital spending and expensed NON-LABOR costs by GAM project and by RA for each listed unit, broken down annually for each year 2002 through 2005 and 2006 to-date (through August).
- c. Test year proposed capital spending and expensed LABOR and NON-LABOR costs by GAM project and by RA for each listed unit.
- d. Remaining authorized GAM capital spending and expensed costs by project and by RA subsequent to the test year, given your responses to parts (a) and (b) of this information request.
- e. Explain and provide calculations associated with any efforts by HELCO to ensure that test year GAM capital spending and expensed costs are at levels representative of ongoing conditions and plans.
- f. Provide a detailed breakdown of the Capital and O&M line items by unit in Attachment 14, indicating the authorized and current plan capital and expense spending by individual projects for each listed unit.

HELCO Response:

- a. There is no detailed report available that shows actual capital spending and expensed LABOR costs by GAM project and by RA for each listed unit, broken down annually for each year 2002 through 2005 and 2006 to-date (through August). GAM project costs were recorded to a series of project and workorders numbers, and the identifying and gathering these to the detail level requested would be unduly burdensome.
- b. There is no detailed report available that shows actual capital spending and expensed NON-LABOR costs by GAM project and by RA for each listed unit, broken down annually for

each year 2002 through 2005 and 2006 to-date (through August). GAM project costs were recorded to a series of project and workorders numbers, and the identifying and gathering these to the detail level requested would be unduly burdensome.

- c. There is no detailed report available that shows test year proposed capital spending and expensed LABOR and NON-LABOR costs by GAM project and by RA for each listed unit. GAM project costs were recorded to a series of project and workorders numbers, and the identifying and gathering these to the detail level requested would be unduly burdensome.
- d. There is no detailed report available that shows the remaining authorized GAM capital spending and expensed costs by project and by RA subsequent to the test year. GAM project costs were recorded to a series of project and workorders numbers, and the identifying and gathering these to the detail level requested would be unduly burdensome.
- e. Refer to CA-IR-49 and related attachments.
- f. The currently available GAM information is shown in Attachment 1. The spreadsheet was prepared at the end of 2005 for the GAM projects. The requested information is confidential and will be provided pursuant to Protective Order No. 22593, dated June 30, 2006.

Confidential Information Deleted
Pursuant to Protective Order No. 22593.

Intentionally left blank.



CA-IR-400

Ref: HELCO's Response to CA-IR-257a; Turbine Overhauls.

The data table summarizing prior turbine overhauls indicates no activity since the 12/12/2004 completion of work on Shipman 3. Please provide the following information:

- a. Explain how this history, with no turbine overhaul work in 2005 or 2006 to-date is thought to be consistent with the referenced statement in testimony that, "A steam turbine overhaul is performed once a year."
- b. What is the normal time interval (number of years) for each of the steam units' turbine overhaul, according to typical industry practice, manufacturer advisories, measured performance indicators or other information relied upon by HELCO in scheduling such work?
- c. Provide the Company's current schedule for the next turbine overhaul for each of the steam units.
- d. Regarding the \$642,000 normalized cost for the Hill 6 overhaul in HELCO-WP-510, please provide a breakdown of the cost elements and activities associated with this amount and explain how the turbine overhaul portion of such work was determined.

HELCO Response:

- a. HELCO has five steam boiler units: Puna Steam, Shipman 3, Shipman 4, Hill 5 and Hill 6.

Based on industry practice, a steam turbine overhaul needs to be performed for each unit every five years, thus the statement of one performed each year. As discussed in HELCO T-5, pages 16 – 20, since 2000, there have been changes to the planned use of each unit, mainly Puna Steam, Shipman, 3 and Shipman 4. In 2000, it was planned that Shipman 3, Shipman 4 and Puna Steam would be in cold standby with the commencement of operations by Hamakua Energy Partners. This was to be followed by the addition of CT-4 and CT-5 at Keahole in 2002, which were subsequently delayed until mid 2004. This planned action took Shipman 3, 4 and Puna Steam out of the normal rotational cycle for once every five years turbine overhauls. In 2003 and 2004, steam turbine overhauls were performed on

Shipman 4 and Shipman 3 respectively as they had not had one performed in normal sequence due to their pending shutdown status. With all of the steam units currently operating, one steam turbine overhaul per year is budgeted and scheduled for 2007 and annually going forward.

- b. The normal time interval is every five years for each of the steam units' turbine overhaul, according to good operating and engineering practice and manufacturer advisories. Actual operating data is also examined in determining where potential problems lie within the turbine. Vibration levels, efficiency tests, temperatures, pressures, and partial internal 'access cover' inspections between turbine major overhauls are also factors to help schedule turbine work. These are some factors that HELCO uses in scheduling such work, and ultimately altering schedules when it is determined that a unit may require more in-depth attention sooner rather than later.
- c. The Company's current schedule (which is subject to change) for the next turbine overhaul for each of the steam units is as follows:

<u>Steam Unit</u>	<u>Forecasted Year</u>
Puna Steam	FY2007
Hill 5	FY2008
Hill 6	FY2009
Shipman 4	FY2010
Shipman 3	FY2011

- d. A breakdown of the cost elements and activities associated with the unadjusted Hill 6 overhaul has been provided in Attachment 1B, page 10 of CA-IR-2. As seen in Attachment

1 of CA-IR-254, the cost of a turbine overhaul versus the average cost of all Hill 6 overhauls over the 2001 to 2006 period is an increase of approximately \$474,000. Additional outside labor is required to disassemble the turbine, address any defects or concerns found once it is opened up, and reassemble the turbine. The turbine overhaul portion of work is determined to occur based on time, while the scope of activities remains the same.

CA-IR-401

Ref: HELCO Response to CA-IR-2 (T-5), Attachment 2 and Attachment 3; Reconciliation of Production Department Project Hours.

The projected "Project Hours" within the RA labor hours forecast sheets in Attachment 2 (pages 1, 25, 30) do not tie to the Attachment 3 listed "Project" hours. Please explain and reconcile the differences between these sources and itemize all other rate case and other project hours contained in the test year forecast.

HELCO Response:

CA-IR-2, HELCO T-5, contains workpapers for non-labor Production Department expenses.

The correct IR that should be referred to is CA-IR-1 (HELCO T-5). The projected "Project Hours" within the RA labor hours forecast sheets in Attachment 2 (of CA-IR-1, HELCO T-5, pages 1, 25, 30) do not tie to CA-IR-1, HELCO T-5, Attachment 3 listed "Project" hours, because rate case project labor hours (Attachment 1 of CA-IR-401) were not included in CA-IR-1. The 2006 rate case project hours shown on Attachment 1, CA-IR-401, together with the hours listed on Attachment 3 of CA-IR-1, HELCO T-5, tie back to pages 1 and 25. See page 2 of this response for the reconciliation of the project labor hours for RAs: HGA (Production – Administration) and HGT (Production – Technical Services).

Page 30 of Attachment 2 of CA-IR-1, HELCO T-5, which showed labor forecast for HGX Combustion and Turbine and Diesel Maintenance, was not the final workpaper.

Attachment 2 of CA-IR-401, is the final workpaper and should serve as a replacement. See page 2 of this response for the reconciliation of project hours for HGX Combustion Turbine and Diesel Maintenance.

Total project hours for the test year are made up of the 17,188 hours listed on Attachment 3 of CA-IR-1, HELCO T-5, and the 644 hours listed on Attachment 1 of CA-IR-401, for a total of 17,832 project hours.

Hawaii Electric Light Company, Inc.
Reconciliation of Project Labor Hours for HGA, HGT and HGX

			(A)	(B)	(C=A+B)	
			Project Labor Hrs Per			Project Labor Hrs Per
			HELCO T-5 CA-IR-1 Attachment 3	CA-IR-401		HELCO T-5 CA-IR-1 Attachment 2
<u>RA</u>	<u>Lbr Class</u>	<u>Position</u>	<u>Page 1</u>	<u>Attachment 1</u>	<u>Total</u>	<u>Page 1</u>
HGA	E	Manager	20	292	312	312
HGA	BUOC	Statistical Clerk	0	88	88	88
HGA	TCS	Asst Supt/Shift Supervisor	540	0	540	540

			(A)	(B)	(C=A+B)	
			Project Labor Hrs Per			Project Labor Hours Per
			HELCO T-5 CA-IR-1 Attachment 3	CA-IR-401		HELCO T-5 CA-IR-1 Attachment 2
			<u>Page 2</u>	<u>Attachment 1</u>	<u>Total</u>	<u>Page 25</u>
Production Technical Services (HGT)						
HGT	FS	Technical Supt	0	176	176	176
		Staff Eng/Env Comp Coordinator, Resource				
HGT	TC	Planner	20	88	108	108

			Project Labor Hrs Per			CA-IR-401 Attachment 2
			HELCO T-5 CA-IR-1 Attachment 3			Replaces HELCO T-5 CA-IR-1 Attachment 2
			<u>Page 2</u>			<u>Page 30</u>
Production CT and Diesel Maint (HGX)						
HGX	TCS	Mech Supv	672			672
HGX	BUTC	WF (mech, elec)	384			384
HGX	G_Mech	Sr Mech, Mach/Mech	384			384
HGX	G_Eleac	Control Tech/Sr Elect	192			192

HELCO Rate Case Project Labor Hours
2005-2006

Provided by Paul Fujioka

RA	Position	<u>Oct-05</u>	<u>Nov-05</u>	<u>Dec-05</u>	<u>Total 2005</u>	<u>Jan-06</u>	<u>Feb-06</u>	<u>Mar-06</u>	<u>Apr-06</u>	<u>May-06</u>	<u>Jun-06</u>	<u>Jul-06</u>	<u>Aug-06</u>	<u>Sep-06</u>	<u>Oct-06</u>	<u>Nov-06</u>	<u>Dec-06</u>	<u>Total 2006</u>
HGA	Manager	16	16	16	48	16	16	16	16	16	16	16	40	40	40	40	20	292
HGA	Statistical Clerk	8	8	8	24	8	8	8	8	8	8	8	8	8	8	8	0	88
HGT	Engineer	8	8	8	24	8	8	8	8	8	8	8	8	8	8	8	0	88
HGT	Superintendent	16	16	16	48	16	16	16	16	16	16	16	16	16	16	16	0	176
					0													0
		48	48	48	144	48	48	48	48	48	48	48	72	72	72	72	20	644

HGX labor 06-07.xls		Hawaii Electric Light Company						184030	A&G 925		A&G 925	549260					
		Labor Forecast - GX Maintenance						HGM 098	HGM 098		HGM 797	HGM 789					Total
		2006						HEL ND	HEL ND		HEL NE	ANS NE					Proj &
								NHGZZZZZ	NHGZZZZZ		NHGZZZZZ	NHGZZZZZ					Nonproj
Empl. #	Position		Avail Hours	Holiday	Vacation	Sick	Other	107 NPL	108 WC	Project Overhaul	150 Safe Tmg	150 Tmg	Remain Hours	OT Hours	Non Proj Hours	Total Hours	over/ under
30910	Mech. Supv	K.Yoneda	2,080	112	160	100	10	382	0	672	8	40	978	730	1,756	2,810	730
TCS Total		1	2,080	112	160	100	10	382	0	672	8	40	978	730	1,756	2,810	730
31015	WF (mech)	J.Nooney	2,080	112	120	100	10	342	0	192	8	40	1,498	610	2,156	2,690	610
30319	WF (elec)	R.Whittington	2,080	112	200	100	10	422	0	192	8	40	1,418	610	2,076	2,690	610
BUTC Total		2	4,160	224	320	200	20	764	0	384	16	80	2,916	1,220	4,232	5,380	1220
vac	Sr. Mechanic	vacant	2,080	112	80	100	10	302	0	128	8	40	1,602	890	2,540	2,970	890
33984	Mach/Mechanic	Cann, P.	2,080	112	80	100	10	302	0	128	8	40	1,602	890	2,540	2,970	890
30308	Sr. Mechanic	K.Muranaka	2,080	112	120	100	10	342	0	128	8	40	1,562	890	2,500	2,970	890
G_Mech Total		3	6,240	336	280	300	30	946	0	384	24	120	4,766	2,670	7,580	8,910	2670
??	Control Tech	Brian Rice	2,080	112	80	100	10	302	0	96	8	40	1,634	730	2,412	2,810	730
33958	Sr. Electrician	N.Roloos	2,080	112	80	100	10	302	0	96	8	40	1,634	730	2,412	2,810	730
G_Eleac Total		2	4,160	224	160	200	20	604	0	192	16	80	3,268	1,460	4,824	5,620	1,460
Total		8	16,640	896	920	800	80	2,696	0	1,632	64	320	11,928	6,080	18,392	22,720	6,080
Average			2,080	112	115	100	10	337	0	204	8	40	1,491	760	2,299	2,840	760
NOTE 1:									NOTE 2:								
Based On 2003-2004 Average -					act 797	act 789		Based On 2003-2004 Average -									
		Sick	Other	Injuries	Safe Tr	Training				Prod ST	Extra ST	OT	DT		OT total	Total hrs	
															0	0	
2003 Annualized		246	80	0	54	18		2003 Annualized **		26,880	1,208	8,284	2,124		11,616	38,496	
2004		1,213	12	0	39	195		2004		10,890	345	2,733	682		3,760	14,650	
Average		730	46	0	47	106		Average		18,885	777	5,508	1,403		7,688	26,573	
# EE's		8	8	8	8	8		- EE's		8	8	8	8		8	8	
Avg Hrs/EE		91	6	0	6	13		Avg hrs/ee		2,361	97	689	175		961	3,322	
SAY		100	10	0	8	40											

CA-IR-402

**Ref: HELCO Response to CA-IR-2 (T-5), Attachment 2 and HELCO-539, page 2;
Reconciliation of Overtime Hours.**

The projected "OT Hours" within the RA labor hours forecast sheets in Attachment 2 (pages 1, 23, 25 and 28) do not tie to the HELCO-539 listed "Overtime Hours." Please explain and reconcile the differences between these sources and quantify any necessary corrections to the hours input into the test year forecast.

HELCO Response:

CA-IR-2, HELCO T-5, contains workpapers for non-labor Production department expenses. The correct IR that should be referred to is CA-IR-1. The projected "OT Hours" within the RA labor hours forecast sheets in Attachment 2 (CA-IR-1, HELCO T-5, pages 1, 23, 25 and 28) do not tie to the HELCO-539 listed "Overtime Hours." The differences between the sources are due to a preliminary summary report that was used to prepare HELCO-539, page 2. CA-IR-402, Attachment 1, shows a revised HELCO-539, page 2 with final numbers which tie to the labor hours forecast sheets in CA-IR-1, HELCO T-5, Attachment 1. Attachment 1 of CA-IR-402 also reflects, for clarification purposes, that the titles in the breakdown of straight time hours have been changed to Non-Project versus Project. Based on this response, there are no other corrections needed to the hours input into the test year forecast.

At a September 18, 2006 conference call between HELCO Production, HECO Regulatory Affairs and the Consumer Advocate's consultants (Utilitech, Inc.), the HELCO T-5 Production workpapers were discussed. One of the items raised for clarification was the difference between the number of employee positions shown in the HELCO T-5 exhibits versus what was shown in the workpapers, specifically for the number of Shipman Plant boiler operators forecasted. Responsibility Area ("RA") HGH, or Hill Plant Operations, was over by one position and RA HGW, or Shipman Plant Operations, was under by one position. At the

time of the budget preparation, it was decided to have five boiler operators at the Shipman Plant (RA: HGW) and to add an additional CT-3 Operator at the Hill Plant (RA: HGH). HELCO later decided to man the Shipman Plant (RA: HGW) with six boiler operators, and thus remove the additional CT-3 operator from the Hill Plant (RA: HGH). This means that 2,740 hours should be reclassified from Hill Plant (RA: HGH) to Shipman Plant (RA: HGW, CA-IR-1, HELCO T-5, Attachment 2, page 28) as found on pages 10 and 11 of Attachment 2 for CA-IR-1, HELCO T-5.

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<u>RA</u>	<u>RA Desc</u>	<u>Overtime Hours</u>	<u>Straight Time Hours</u>	<u>Total ST+OT Hours</u>	<u>Proportion OT/ST Hrs %</u>
<u>2003 Actual</u>					
HGA	Admin-Prod O&M	3,073	21,300	24,373	14%
HGT	Technical	129	7,640	7,769	2%
HGC	Keahole Stn Oper	801	4,028	4,829	20%
HGH	Hill Stn Oper	12,915	44,516	57,432	29%
HGP	Puna Stn Oper	8,655	23,952	32,607	36%
HGW	Shipman Stn Oper			0	0%
HGK	Keahole Stn Maint	2,467	6,832	9,299	36%
HGM	St/Hy Maint	11,519	37,547	49,066	31%
HGX	CT&D Hilo Maint	2,904	6,720	9,624	43%
TOTAL		42,463	152,535	194,998	28%
<u>2004 Actual</u>					
HGA	Admin-Prod O&M	4,940	23,523	28,462	21%
HGT	Technical	397	7,947	8,344	5%
HGC	Keahole Stn Oper	4,541	9,267	13,807	49%
HGH	Hill Stn Oper	15,839	46,587	62,426	34%
HGP	Puna Stn Oper	7,288	18,687	25,975	39%
HGW	Shipman Stn Oper			0	0%
HGK	Keahole Stn Maint	4,287	8,749	13,036	49%
HGM	St/Hy Maint	7,415	33,702	41,117	22%
HGX	CT&D Hilo Maint	3,791	11,149	14,939	34%
TOTAL		48,497	159,609	208,106	30%
<u>2005 Actual</u>					
HGA	Admin-Prod O&M	2,982	25,539	28,521	12%
HGT	Technical	6	8,403	8,409	0%
HGC	Keahole Stn Oper	5,200	12,909	18,110	40%
HGH	Hill Stn Oper	12,197	45,617	57,814	27%
HGP	Puna Stn Oper	6,882	20,474	27,356	34%
HGW	Shipman Stn Oper			0	0%
HGK	Keahole Stn Maint	5,456	11,399	16,855	48%
HGM	St/Hy Maint	5,443	33,635	39,078	16%
HGX	CT&D Hilo Maint	3,210	13,513	16,723	24%
TOTAL		41,376	171,489	212,865	24%

Hawaii Electric Light Company Inc.
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(Revised HELCO-539)

<u>RA</u>	<u>RA Desc</u>	<u>Overtime Hours</u>	<u>Straight Time Hours</u>	<u>Total ST+OT Hours</u>	<u>Proportion OT/ST Hrs %</u>
2006 Budget					
HGA	Admin-Prod O&M	5,370	27,040	32,410	20%
HGT	Technical	525	10,400	10,925	5%
HGC	Keahole Stn Oper	5,840	16,640	22,480	35%
HGH	Hill Stn Oper	15,580	49,920	65,500	31%
HGP	Puna Stn Oper	7,000	20,800	27,800	34%
HGW	Shipman Stn Oper	5,600	16,640	22,240	34%
HGK	Keahole Stn Maint	6,200	16,640	22,840	37%
HGM	St/Hy Maint	9,940	37,440	47,380	27%
HGX	CT&D Hilo Maint	6,080	16,640	22,720	37%
TOTAL		62,135	212,160	274,295	29%

2006 Budget - Breakdown of Straight Time Hours				
		<u>Non-Project</u>	<u>Project</u>	<u>Total</u>
HGA	Admin-Prod O&M	26,100	940	27,040
HGT	Technical	10,116	284	10,400
HGC	Keahole Stn Oper	16,640		16,640
HGH	Hill Stn Oper	49,920		49,920
HGP	Puna Stn Oper	20,480	320	20,800
HGW	Shipman Stn Oper	16,640		16,640
HGK	Keahole Stn Maint	13,760	2,880	16,640
HGM	St/Hy Maint	25,664	11,776	37,440
HGX	CT&D Hilo Maint	15,008	1,632	16,640
TOTAL		194,328	17,832	212,160

Note: 2006 budget hours ties with labor input sheets. Since the labor expenses were not reclassified, hours shown on this Attachment for HGH (Hill Plant) and HGW (Shipman Plant) were not adjusted for the transfer of one operator position (660 OT hours plus 2,080 ST hour = 2,740 hours) from HGH (Hill Plant) to HGW (Shipman Plant).

CA-IR-403

Ref: HELCO Response to CA-IR-2 (T-5), Attachment 2; Footnote Calculations of Nonproductive (Sick, Other Injuries, etc.) Hours.

The projected elements of Nonproductive Labor for each RA appear to be based upon historical average data for experienced sick leave hours, injury hours, etc. Please provide the following information regarding this process:

- a. Confirm that the goal of the calculations is to establish a normal, ongoing level of nonproductive hours within each RA, or explain any exceptions to this stated goal.
- b. Explain why the footnote calculations routinely round up the calculated historical data and provide complete copies of all reports, studies, workpapers and other information that is supportive of such rounding up process.
- c. Explain why HGK is forecasted to experience 190 hours of sick paid time off per employee and provide all data supportive of the conclusion that such a high paid absence rate is normal and indicative of ongoing operations.
- d. Provide actual year 2005 paid absence data for HGK personnel and explain whether such experience in 2005 is supportive of the proposed 190 hours/year rate for each employee.
- e. Provide actual year 2006 year-to-date paid absence data for HGK personnel and explain whether such experience in 2006 is supportive of the proposed 190 hours/year rate for each employee.

HELCO Response:

CA-IR-2 contains workpapers for non-labor department expenses. The correct IR that should be referred to is CA-IR-1.

- a. The goal of the calculation of Nonproductive Labor for each RA is to prepare an estimate based upon historical average data for experienced sick leave hours, injury hours, etc. as it has consistently been done in prior years. Establishing a normal, ongoing level of nonproductive hours within each RA, is a goal of the Production Department as a whole.
- b. The footnote calculations routinely round up the calculated historical data for purposes of being conservative. Conservative in terms of the effect on net income. Labor forecasts for the Production department have consistently been prepared in this manner.

- c. HGK is budgeted to experience 190 hours of sick paid time off per employee based on historical data. All data has been provided in CA-IR-1. HELCO has not concluded that such a high paid absence rate is normal or indicative of a trend. This higher rate of sick paid time off for HGK was due to two separate and prolonged sick leave absences. One case started in November 2001 and continuing until September 2002, culminating in retirement of the employee. Another prolonged sick paid time off period for one individual extended for nine months from September 2003 to May 2004. As a result, the HGK historical average is higher as compared to other RA's. Other RAs, such as HGM, are lower than average. The overall result for the Department is reasonable, since there will be variances between RAs.
- d. See below for actual year 2005 paid absence data for HGK personnel. This actual data from 2005 is not supportive of the budgeted 190 hours/year rate for each employee for this RA. A historical average is used for budgeting because there is no better method to use for this unknown.

<u>Year</u>	<u>#' ee</u>	<u>Total Sick Hrs</u>	<u>Other</u>	<u>Injuries</u>
2005	6	72.0	28.5	-

- e. See below for actual year to date October 2006 year-to-date paid absence data for HGK personnel. This actual data is not supportive of the budgeted 190 hours/year rate for each employee. A historical average is used for budgeting because there is no better method to use for this unknown. An adjustment would not be proposed based on this information. Any adjustment would have to consider all RAs. Moreover, if an adjustment were made to decrease non productive pay, then the offset would be to increase productive pay, with a net of zero. It is reasonable to assume total hours budgeted will be charged, whether that be to

productive or non productive pay.

<u>Year</u>	<u>#' ee</u>	<u>Total Sick hrs</u>	<u>Other</u>	<u>Injuries</u>
October 2006YTD	6	524.0	14.5	-

CA-IR-404

Ref: HELCO Response to CA-IR-2 (T-5), Attachment 2; Footnote Calculations of Overtime Hours.

The projected elements of Overtime Labor for each RA appear to be based upon historical average data or selected historical year data for experienced overtime hours. Please provide the following information regarding this process:

- a. Confirm that the goal of the calculations is to establish a normal, ongoing level of overtime hours within each RA, or explain any exceptions to this stated goal.
- b. Explain why the footnote calculations routinely round up the calculated historical average overtime hours data and provide complete copies of all reports, studies, workpapers and other information that is supportive of such rounding up process.
- c. Confirm that for HGA employees with labor class TCS, projected extra straight time compensation of 630 hours per employee is forecasted and that all of these hours contribute to added O&M labor expense at the Company's standard hourly labor rates.

HELCO Response:

CA-IR-2 contains workpapers for non-labor department expenses. The correct IR that should be referred to is CA-IR-1.

- a. The goal of the calculation of projected elements of Overtime Labor for each RA is to prepare an estimate based upon historical average data for experienced overtime, which is that being budgeted at 29% in the 2006 budget as shown in CA-IR-402. Establishing a normal, ongoing level of overtime hours within each RA, is a goal of the Production Department as a whole. An exception to the 29% amount budgeted is that the departmental overtime goal is 19% for 2006.
- b. The footnote calculations routinely round up the calculated historical data for purposes of being conservative. Conservative in terms of the effect on net income. Labor forecasts for the Production department have consistently been prepared in this manner.
- c. Each labor hour forecasted is multiplied by a standard labor rate for that labor class. This

confirms that for HGA employees with labor class TCS, projected extra straight time compensation of 630 hours per employee is forecasted and that all of these hours contribute to added O&M labor expense at the Company's standard hourly labor rates for the TCS labor class.

CA-IR-405

Ref: HELCO Response to CA-IR-2 (T-5), Attachment 2; Proposed Test Year Overtime Hours.

For each of the following Production Department RA overtime hours estimates, please provide:

- a. The actual calendar year 2005, and
- b. year-to-date August 2006 actual overtime hours.
- c. Explain the basis for concluding that the test year estimated hours (as stated below) are reasonable; and
- d. Provide any additional information required to reconcile and understand whether recent actual overtime trends are supportive of the Company's estimated overtime levels:
 1. HGA (TCS labor class) TY estimated 630 hours/employee.
 2. HGA (all non TCS) TY estimated 160 hours/employee.
 3. HGC TY estimated 730 hours/employee.
 4. HGH TY estimated 660 hours/employee (all but 1 employee).
 5. HGK TY estimated 775 hours/employee.
 6. HGM TY estimated 550 hours/employee.
 7. HGP TY estimated 700 hours/employee.
 8. HGT TY estimated 100 hours/employee.
 9. HGW TY estimated 700 hours/employee.
 10. HGX TY estimated 970 hours/employee.

HELCO Response:

CA-IR-2 contains workpapers for non-labor department expenses. The correct IR that should be referred to is CA-IR-1.

- a. See table provided in response to part d. below for actual calendar 2005 amounts which agree to Attachment 1 of CA-IR-402.
- b. See table below for August 31, 2006 year-to-date actual overtime hours.
- c. The test year estimated hours (as stated below) are reasonable based on the required manning needed to operate and maintain the HELCO generating units. Explanation of the basis for concluding this was provided in exhibits HELCO-536, 537, 538, 539 and 543, as

well as responses to CA-IR-1, CA-IR-2, CA-IR-61, CA-IR-62, CA-IR-68, CA-IR-69, CA-IR-71 and CA-IR-74.

- d. See below for added information which includes October 2006 year-to-date actual overtime hours and October 2006 year-to-date actual overtime hours per employee.

	Actual Overtime			2006 YTD hours/ee
	2005	YTD August 2006	YTD Oct 2006	
1. HGA (TCS labor class) TY estimated 630 hours/employee.	2,282	1,952	2,336	334
2. HGA (all non TCS) TY estimated 160 hours/employee.	700	591	626	313
3. HGC TY estimated 730 hours/employee.	5,200	3,021	3,752	536
4. HGH TY estimated 660 hours/employee (all but 1 employee).	12,197	11,228	12,583	629
5. HGK TY estimated 775 hours/employee.	5,456	2,407	3,124	521
6. HGM TY estimated 550 hours/employee.	5,443	4,985	6,396	355
7. HGP TY estimated 700 hours/employee.	6,882	6,013	6,715	480
8. HGT TY estimated 100 hours/employee.	6	1	1	-
9. HGW TY estimated 700 hours/employee.	-	2,385	3,195	399
10. HGX TY estimated 970 hours/employee	3,210	1,353	1,721	246
TOTAL	41,376	33,936	40,449	

The RA's have reasonable levels of estimated overtime for the TY. RA's HGC, HGH, HGK, and HGP are on track for meeting their respective estimates. HGM is below, but this figure does not account for two steam plant overhauls yet to be completed in 2006, and this figure is expected to increase. HGW estimate was based on HGP estimated overtime hours and is indicating less hours than estimated. This will increase, mainly due to 2 shift operation (and often 3 shift operation) versus the three shift operation at HGP. HGX is below, due in part

that most of the previous overtime was incurred overhauling diesel engines, which have been completed. HGA (TCS and non TCS) are below the estimated overtime levels, as is HGT, which doesn't incur overtime expense as it is 100% manned by merit employees.

CA-IR-406

Ref: HELCO Response to CA-IR-2 (T-5), Attachment 2, page 25; Technical Supt. Position.

Please state whether or not the first listed position forecasted in RA=HGT was intended to be eliminated from the test year expense forecast and, if so, provide either the reference information and additional data required to confirm such elimination or additional adjustment calculations required to effect such elimination.

HELCO Response:

CA-IR-2 contains workpapers for non-labor department expenses. The correct IR that should be referred to is CA-IR-1.

The first listed position (Technical Superintendent) forecasted in RA HGT (Technical Services), was intended to be eliminated from the test year expense forecast. Attachment 1 shows an additional adjustment calculation required to effect such elimination. This includes the total hours multiplied by the standard labor rate $2,205 \text{ hours} \times \$36.89 = \$81,342.45$ plus the productive hours multiplied by the expense element 421 NPW Rate $(1,873 \text{ hours} \times \$4.30 = \$8,053.90)$ for a total of \$89,396.35. The hours multiplied by the NPW rate include only the productive hours under EE 150 (expense element 150 – labor cost). The related NARUC accounts from CA-IR-1, Attachment 2, page 26 would be reversed for the original hours charged, as shown on Attachment 1. Note that the position was filled for part of the year, even though the adjustment is for the entire year.

Resp Area (RA)	<u>HGT</u>
Labor Class	<u>FS</u>

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CA-IR-407

Ref: HELCO Response to CA-IR-69, Attachment 1; Historical Overtime Hours.

Please provide the number of overtime hours incurred within each listed RA in each year 2003, 2004 and 2005 that was for staffing at the unmanned Shipman station and explain how and when the proposed new staffing at Shipman is expected to reduce overtime at the other stations. Provide copies of all studies, reports, workpapers and other data associated with your response.

HELCO Response:

The number of total hours incurred within each listed RA (only HGH and HGP) in each year 2003, 2004 and 2005 that was for staffing at the unmanned Shipman station was provided in response to CA-IR-62, subparts a. and b. The reporting system is unable to distinguish how much of this was for overtime (i.e., say a HGH operator charges 16 hours in one day, the Ellipse system does not categorize which of those hours were overtime and which were regular time). Explanations of the effect of the proposed new staffing at Shipman or overtime at the other stations, along with copies of all studies, reports, workpapers and other associated data were provided in response to CA-IR-62, subparts c. and d., and in response to CA-IR-61.

CA-IR-408

Ref: HELCO Response to CA-IR-71, Workload Requirements and Overtime Hours.

According to part (d) of the response, "Further, it is not possible to quantify the extent to which higher staffing for maintenance is intended to remedy high overtime rates in 2004 and 2005 because the maintenance staffing levels forecasted were based on the numbers of specific trades and craft personnel required to keep up with anticipated increased workload requirements." Please provide the following information:

- a. Explain the process through which HELCO evaluated its ability to reduce overtime by increased staffing of production maintenance personnel.
- b. Describe and quantify the desired or targeted levels of overtime that indicate optimal staffing conditions in each production maintenance RA.
- c. Provide copies of all reports, analyses, projections, workpapers and other documents relied upon by HELCO to measure and interpret the referenced "anticipated increased workload requirements".

HELCO Response:

- a. HELCO's evaluation consisted of applying the available productive hours of additional staffing against the number of forecast overtime hours. The amount of forecasted overtime hours was based on historical data. Typically, the amount of available productive hours was based on a standard 2,080 hours reduced by sick leave (approximately 2%), vacation (2 weeks), holidays (14 days), training (approximately 5%), or about 1,660 available hours. As stated in subpart (d) of HELCO's response to CA-IR-71, some overtime is a function of work requirements to keep generating units operational and in compliance, and the amount of available productive time provided by additional staffing may not necessarily offset forecast overtime on a one-for-one basis. In other words, some of the forecasted overtime is for callout, emergency work. In actuality, employee transfers (intra and inter company), retirements, and senior employees having more than just 2 weeks of vacation to take result in additional overtime since the daily work of keeping the physical plant operating properly

falls upon the remaining employees. Some of the total overtime is forecasted to be callout overtime, and in those situations, additional staffing will not reduce this type of overtime. In contrast to callout overtime, some overtime is forecast as workloads that are in excess of what can be accomplished by existing maintenance staff and this type of forecast overtime can be offset by additional staffing. In this case the amount of overtime forecast is reduced on a one-for-one basis. Adding staff, however, could indirectly result in some reduction to callout overtime as more emphasis is placed on predictive and preventative work rather than corrective, emergency work, but this is not easily quantifiable. In abiding by HELCO's generation criteria, we maintain enough generating margin to cover the loss of the largest unit, usually Hamakua Energy Partners at 31.5 MW. To maintain this criteria at all times can result in rescheduling of maintenance on HELCO generating units to times such as off peak hours, weekends, and other times of higher margins, all of which also result in overtime. As stated in CA-IR-77, this is the result of maintaining an isolated grid.

b. The desired target levels are as follows:

- GM (Steam & Hydro Maintenance, East Hawaii) - This RA is responsible for the maintenance of all HELCO steam units and hydros. The target overtime on a yearly basis is 27% of straight time hours.
- GX (Diesel and Combustion Turbine Maintenance, East Hawaii) - This RA is responsible for the maintenance of Hilo, Waimea, Punaluu, Panaewa diesel units and CT-1 and CT-3. The target overtime on a yearly basis is 37% of straight time hours.
- GK (Diesel and Combustion Turbine Maintenance, West Hawaii) - This RA is responsible for the maintenance of Keahole, Ouli, Kapua diesel units and CT-2, CT-4 and CT-5. The target overtime on a yearly basis is 37% of straight time hours.

- GA (Production Administrative and Shift Supervisors) – This RA represents the Senior Production Staff, Clerical and Operations Shift Supervisors. The target overtime on a yearly basis is 20% of straight time hours.
 - GT (Technical Services) – This RA is responsible for environmental work and major projects. The target overtime is 0% since this is an administrative RA staffed with Merit personnel.
 - GP, GW, GH, GC – These RA's represent the plant operators at the Puna, Shipman (Waiakea), Hill, and Keahole plants, respectively and the target overtime on a yearly basis is 30% of straight time hours.
- c. The anticipated increase in workload requirements was expected to result with the addition of Keahole CT-4 and CT-5. Based in part on HELCO's experience with CT-3 since 1991, and based on the bargaining unit job descriptions (which defines which duties can be performed by each specific craft), the level of staffing for GK was expected to be similar to GX in Hilo, and the test year GK staffing was modeled after GX.

CA-IR-409

Ref: HELCO Response to CA-IR-1 (T-5), Attachment 2; Capitalized versus Expensed Labor Hours/Costs.

Please confirm that every hour of the Production Department labor set forth in the forecast input sheets is assumed to be expensed on the Company's books and provide the following information:

- a. If anything but unqualified confirmation is provided, explain and provide reference into all labor hours for which test year costs are capitalized.
- b. Provide the accounting distribution (expense versus capital) for all actual annual Production labor costs by RA for each year 2001, 2002, 2003, 2004, 2005 and 2006, to-date.
- c. To the extent any Production Department labor costs were capitalized in the data provided in response to part (b) of this information request, explain why such accounting will not be recurring or should otherwise be ignored for ratemaking purposes.
- d. Provide complete copies of all studies, reports, projections and other documents supportive of your response to part (c) of this information request.

HELCO Response:

This is to confirm that every hour of the Production Department labor set forth in the forecast input sheets is assumed to be expensed on the Company's books as O&M.

- a. Not applicable.
- b. Attachment 1 provides the accounting distribution (expense versus capital) for all actual annual Production labor costs by RA for each year 2001, 2002, 2003, 2004, 2005 and September 30, 2006 year-to-date.
- c. The Production Department labor costs that were capitalized in the data provided in response to subpart (b) of this information request are all project based. Consistent with what was discussed in the response to CA-IR-261, an adjustment to the test year labor expense dollars will be made in order to reflect that some of the labor hours will be spent on capital projects. The adjustment represents 3.3% of the labor hours (274,295 total hours per

CA-IR-402, Attachment 1), or 9,052 hours. The 3.3% used is the average amount of labor hours charged to capital from 2001 to 2005.

- d. Refer to Attachment 1.

Hawaii Electric Light Company Inc.
Rate Case - Test Year 2006
Capital vs. Expense Labor Hours

CA-IR-409
DOCKET NO. 05-0315
ATTACHMENT 1
PAGE 1 OF 2

<u>RA</u>	<u>RA Desc</u>	<u>Total Hours</u>	<u>Capital Hours</u>	<u>O&M Hours</u>	<u>Capital %</u>	<u>O&M %</u>
<u>2001 Actual</u>						
HGA	Admin-Prod O&M	27,522		27,522	0.0%	100.0%
HGT	Technical	0		0		
HGC	Keahole Stn Oper	4,386		4,386	0.0%	100.0%
HGH	Hill Stn Oper	56,865		56,865	0.0%	100.0%
HGP	Puna Stn Oper	21,178		21,178	0.0%	100.0%
HGW	Shipman Stn Oper	1,880		1,880	0.0%	100.0%
HGK	Keahole Stn Maint	10,219	286	9,933	2.8%	97.2%
HGM	St/Hy Maint	57,165	4,391	52,774	7.7%	92.3%
HGX	CT&D Hilo Maint	0		0		
TOTAL		179,215	4,677	174,538	2.6%	97.4%

<u>2002 Actual</u>						
HGA	Admin-Prod O&M	28,059	50	28,009	0.2%	99.8%
HGT	Technical	2,349	60	2,289	2.6%	97.4%
HGC	Keahole Stn Oper	4,727		4,727	0.0%	100.0%
HGH	Hill Stn Oper	61,501		61,501	0.0%	100.0%
HGP	Puna Stn Oper	27,547		27,547	0.0%	100.0%
HGW	Shipman Stn Oper	0		0		
HGK	Keahole Stn Maint	9,994	993	9,001	9.9%	90.1%
HGM	St/Hy Maint	58,837	3,663	55,174	6.2%	93.8%
HGX	CT&D Hilo Maint	0		0		
TOTAL		193,014	4,766	188,248	2.5%	97.5%

<u>2003 Actual</u>						
HGA	Admin-Prod O&M	24,373	264	24,109	1.1%	98.9%
HGT	Technical	7,769	608	7,161	7.8%	92.2%
HGC	Keahole Stn Oper	4,829		4,829	0.0%	100.0%
HGH	Hill Stn Oper	57,432	311	57,121	0.5%	99.5%
HGP	Puna Stn Oper	32,607		32,607	0.0%	100.0%
HGW	Shipman Stn Oper	0		0		
HGK	Keahole Stn Maint	9,299		9,299	0.0%	100.0%
HGM	St/Hy Maint	49,066	4,248	44,818	8.7%	91.3%
HGX	CT&D Hilo Maint	9,624	201	9,423	2.1%	97.9%
TOTAL		194,998	5,632	189,366	2.9%	97.1%

<u>2004 Actual</u>						
HGA	Admin-Prod O&M	28,462	2,413	26,049	8.5%	91.5%
HGT	Technical	8,344	1,965	6,379	23.6%	76.4%
HGC	Keahole Stn Oper	13,807	1,447	12,360	10.5%	89.5%
HGH	Hill Stn Oper	62,426	517	61,909	0.8%	99.2%
HGP	Puna Stn Oper	25,975	68	25,907	0.3%	99.7%
HGW	Shipman Stn Oper	0		0		
HGK	Keahole Stn Maint	13,036	2,545	10,491	19.5%	80.5%
HGM	St/Hy Maint	41,117	854	40,263	2.1%	97.9%
HGX	CT&D Hilo Maint	14,939	789	14,150	5.3%	94.7%
TOTAL		208,106	10,598	197,508	5.1%	94.9%

Hawaii Electric Light Company Inc.
Rate Case - Test Year 2006
Capital vs. Expense Labor Hours

<u>RA</u>	<u>RA Desc</u>	<u>Total Hours</u>	<u>Capital Hours</u>	<u>O&M Hours</u>	<u>Capital %</u>	<u>O&M %</u>
2005 Actual						
HGA	Admin-Prod O&M	28,521	190	28,331	0.7%	99.3%
HGT	Technical	8,409	1,860	6,549	22.1%	77.9%
HGC	Keahole Stn Oper	18,110		18,110	0.0%	100.0%
HGH	Hill Stn Oper	57,814		57,814	0.0%	100.0%
HGP	Puna Stn Oper	27,356		27,356	0.0%	100.0%
HGW	Shipman Stn Oper	0		0		
HGK	Keahole Stn Maint	16,855	2,440	14,415	14.5%	85.5%
HGM	St/Hy Maint	39,078	2,386	36,692	6.1%	93.9%
HGX	CT&D Hilo Maint	16,723	801	15,922	4.8%	95.2%
TOTAL		212,865	7,677	205,188	3.6%	96.4%

<u>RA</u>	<u>RA Desc</u>	<u>Total Hours</u>	<u>Capital Hours</u>	<u>O&M Hours</u>	<u>Capital %</u>	<u>O&M %</u>
2006 Budget						
<i>(actuals thru 09/06)</i>						
HGA	Admin-Prod O&M	23,290	336	22,955	1.4%	98.6%
HGT	Technical	5,841	118	5,723	2.0%	98.0%
HGC	Keahole Stn Oper	15,534		15,534	0.0%	100.0%
HGH	Hill Stn Oper	42,889		42,889	0.0%	100.0%
HGP	Puna Stn Oper	27,524		27,524	0.0%	100.0%
HGW	Shipman Stn Oper	11,054		11,054	0.0%	100.0%
HGK	Keahole Stn Maint	12,148	31	12,117	0.3%	99.7%
HGM	St/Hy Maint	34,008	830	33,178	2.4%	97.6%
HGX	CT&D Hilo Maint	13,096	29	13,068	0.2%	99.8%
TOTAL		185,386	1,343	184,043	0.7%	99.3%

Average 2001 - 2005

3.3% 96.7%

CA-IR-410

Ref: HELCO Response to CA-IR-2 (T-5), Attachment 1, page 4 of 5; HN0, HW0 Costs.

Please provide supporting documentation for the \$38,504 and \$117,800 estimated test year production expenses charged from these Administrative and Engineering RAs.

HELCO Response:

The supporting documentation for the \$38,504 and \$117,800 estimated test year production expenses charged from these Administrative and Engineering RAs are provided in HELCO's responses to CA-IR-364, and CA-IR-368, respectively.

CA-IR-411

Ref: HELCO Response (T-6) to CA-IR-1 (T&D Direct Labor).

Referring to CA-IR-1, part (b), pages 29-100 appear to represent labor input sheets by Distribution Department labor class while pages 157-169 represent resource leveling report detail for the Distribution Department. For certain Distribution RA labor classes, the total projected labor hours per the labor input sheets do not tie to the total labor hours per the resource leveling reports (e.g., RA:DC labor classes TCS and DTECHCREW). Please provide the following:

- a. Please confirm that the labor input sheets represent the primary source documentation supporting the Distribution Departments 2006 labor hour forecast. If this cannot be confirmed, please explain.
- b. Is the resource leveling report a Pillar module that summarizes the forecast labor hours from the labor input sheets or does it originate from another data source? Please explain.
- c. Please explain whether the referenced labor input sheets or the resource leveling reports represent the labor hours for the Distribution Department that have been included in the 2006 test year forecast.
- d. The labor hour differences (i.e., between the labor input sheets and the resource leveling reports) for RA:DC labor classes TCS and DTECHCREW appear to be attributable to capital project hours. Please provide the following:
 1. Please explain and reconcile the labor hour forecast differences between the identified sources and explain the basis for such differences.
 2. Please clarify whether the labor input sheet or the resource leveling report more accurately reflects the labor hours included in the 2006 forecast.

HELCO Response:

- a. The Distribution Department forecasts labor hours for Distribution Department employees related to clearing and O&M expense accounts. The Engineering Department forecasts labor hours for Distribution Department employees related to capital projects. There are certain capital projects that also have associated O&M costs. For these projects the Engineering Department forecasts the associated O&M labor hours for Distribution Department employees as well. The labor input sheets provided in response to CA-IR-1,

pages 29-100 are the primary source documentation for the forecast of labor hours for the clearing and O&M expense accounts.

- b. The resource leveling report consolidates the information from the labor input sheets forecasted by the Distribution Department (O&M expense and clearing) and the labor hours for capital projects forecasted by the Engineering Department (capital and O&M expense related to capital). It is a report generated from the Pillar Module.
- c. The referenced resource leveling reports represent the unadjusted labor hours (O&M, capital and clearing) forecasted by the Distribution Department and the Engineering Department. This unadjusted labor hour forecast was used to develop the 2006 test year forecast. The referenced labor input sheets represent only the unadjusted labor hours (O&M and clearing) forecasted by the Distribution Department.
- d.
 - 1. As described in part a. of this response, the labor input sheets are done by the Distribution Department to develop the labor hour forecast for O&M and clearing accounts. The Engineering Department develops the labor hour forecast for capital work. The resource leveling report consolidates these two sources and provides labor hour forecast information for O&M, clearing and capital work.

The labor input sheets in CA-IR-1, part b, pages 41-45 provide the source documentation for the forecast of the clearing and O&M expense accounts for the labor classes TCS and DTECHCREW in RA:HDC. CA-IR-1, part (b), pages 158-160, provide the resource leveling report information for clearing, O&M and capital forecasts for the labor classes TCS and DTECHCREW in RA:HDC.

For the TCS labor class, the individual activities listed in the labor input sheets are

consolidated and appear as only four separate projects in the resource leveling report. The four separate projects are "NHDZZZZZ - Distribution", "H0000014 - Attend Training", "H0000015 - Attend Safety Training" and again "NHDZZZZZ - Distribution". All other line items in the resource leveling report are related to capital project forecasts and are not derived from the labor input sheets. Page 5 of this response provides a reconciliation between the labor input sheet prepared by the Distribution Department and the resource leveling report for the TCS labor class for RA:HDC.

For the DTECHCREW labor class, the individual activities listed in the labor input sheets are consolidated and appear as only six separate projects in the resource leveling report. The six separate projects are "NHDZZZZZ - Distribution", "H0000014 - Attend Training", "H0000015 - Attend Safety Training", "H0000016 - Substation Inspection", "NHDZZZZZ - Distribution" and "NHDZZZZZ - Distribution". All other items listed in the resource leveling report are related to the capital project forecasts and are not derived from the labor input sheets. Page 5 of this response provides a reconciliation between the labor input sheet and the resource leveling report for the DTECHCREW labor class for RA:HDC.

For both of the TCS and DTECHCREW labor classes, the total annual hours indicated in the labor hour input sheets match to the total of their respective projects in the resource leveling report. For the TCS labor class the monthly totals in the labor input sheets also match the monthly totals of the respective projects in the resource leveling report. For the DTECHCREW labor class the monthly totals in the labor input sheets do not match the monthly totals of the respective projects in the resource

leveling report. The difference occurs in activity 485, account 592.00 due to equal monthly estimates in the labor hour input sheets versus varying monthly estimates that were entered into Pillar. Page 5 of this report supplies the reconciliation between the labor hour input sheets and the resource leveling report for activity 485.

2. As stated in response c., the resource leveling reports represent the unadjusted labor hours for the Distribution Department that were used to develop the 2006 test year forecast. The labor input sheets forecast only labor hours related to O&M and clearing accounts in the Distribution Department.

Hawaii Electric Light Company, Inc.

Labor Class	Account	Project	Indicator	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Tot
CA-IR-1, Part b, Page 158	TCS	184.03 - Energy Delivery/Clearing	NC ⁽¹⁾	38.0	38.0	20.0	36.0	37.0	37.0	37.0	37.0	37.0	37.0	69.0	53.0	472.0
CA-IR-1, Part b, Page 159	TCS	184.06 - Energy Delivery Clearing	NC ⁽²⁾	309.0	277.0	330.0	279.0	323.0	308.0	292.0	321.0	291.0	306.0	276.0	276.0	3,588.0
CA-IR-1, Part b, Page 158	TCS	184.06 - Energy Delivery Clearing	NC ⁽³⁾	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	54.0
CA-IR-1, Part b, Page 158	TCS	184.06 - Energy Delivery Clearing	NC ⁽⁴⁾	6.0	6.0	18.0	6.0	8.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	89.0
		Per Resource Leveling Report		355.0	323.0	370.0	325.0	372.0	355.0	340.0	370.0	340.0	355.0	357.0	341.0	4,203.0
CA-IR-1, Part b, Page 42	TCS	Per Distribution Dept Labor Input Sheets		355.0	323.0	370.0	325.0	372.0	355.0	340.0	370.0	340.0	355.0	357.0	341.0	4,203.0
TCS		VARIANCE		-	-	-	-	-	-	-	-	-	-	-	-	-
CA-IR-1, Part b, Page 159	DTECHCREW	184.03 - Energy Delivery NHDZZZZZ - Distribution	NC ⁽¹⁾	450.0	450.0	282.0	450.0	451.0	451.0	451.0	451.0	451.0	451.0	787.0	619.0	5,744.0
CA-IR-1, Part b, Page 160	DTECHCREW	163 - Stores Clearing NHDZZZZZ - Distribution	NC ⁽²⁾	80.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	720.0
CA-IR-1, Part b, Page 160	DTECHCREW	Various NHDZZZZZ - Distribution	NE ⁽⁴⁾	2,080.4	1,835.5	2,298.4	1,808.3	2,096.5	2,063.9	1,947.2	2,089.9	1,841.9	1,996.3	1,865.3	1,774.4	23,296.0
CA-IR-1, Part b, Page 159	DTECHCREW	926 - Emp Pension & Benefit H0000014 - Attend Training	NE ⁽⁴⁾	51.0	51.0	51.0	51.0	51.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	619.0
CA-IR-1, Part b, Page 159	DTECHCREW	925 - Injuries & Damages H0000015 - Attend Safety Training	NE ⁽⁴⁾	65.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	791.0
CA-IR-1, Part b, Page 159	DTECHCREW	562.00/582.00 ⁽¹⁾ H0000016 - Substation Inspection	NE ⁽⁴⁾	87.0	87.0	87.0	87.0	87.0	87.0	87.0	88.0	88.0	88.0	88.0	88.0	1,049.0
		Per Resource Leveling Report		2,793.4	2,349.5	2,844.4	2,520.3	2,811.5	2,779.9	2,683.2	2,806.9	2,556.9	2,713.3	2,718.3	2,659.4	32,219.0
CA-IR-1, Part b, Page 45	DTECHCREW	Per Distribution Dept Labor Input Sheets		2,711.0	2,493.0	2,782.0	2,493.0	2,821.0	2,712.0	2,603.0	2,821.0	2,603.0	2,712.0	2,829.0	2,661.0	32,221.0
DTECHCREW		VARIANCE		82.4	(143.5)	82.4	27.3	(8.5)	67.9	60.2	(14.1)	(44.1)	1.3	(110.7)	(1.6)	(2.0)
CA-IR-1, Part b, Page 44	DTECHCREW	Act. 485/ Act. 592.00 ⁽²⁾ NHDZZZZZ - Distribution	NE ⁽⁴⁾	287.0	267.0	287.0	267.0	267.0	267.0	267.0	267.0	267.0	267.0	267.0	267.0	3,204.0
Pillar 2006 TV Input	DTECHCREW	Act. 485/ Act. 592.00 ⁽²⁾ NHDZZZZZ - Distribution	NE ⁽⁴⁾	349.4	123.5	349.4	294.3	259.6	334.9	327.2	252.9	222.9	266.3	156.3	265.4	3,204.0
DTECHCREW		VARIANCE		82.4	(143.5)	82.4	27.3	(7.4)	67.9	60.2	(14.2)	(44.1)	1.3	(110.7)	(1.6)	0.0

Reconciliation:

Note (1) Act 582 = Station Expenses - Trans Opers; Act 582 = Station Expense - Dist Opers
 Note (2) Activity 485 = Maintain Substation Distribution - Preventive; Act 592 = Maint Substation Equip Distribution
 Note (3) Indicator NC = Non-billable clearing
 Note (4) Indicator NE = Non-billable O&M Expense other than Supervision

CA-IR-412

Ref: HELCO Response (T-6) to CA-IR-1 (T&D Direct Labor).

Referring to CA-IR-1, part (b), pages 29-100 appear to represent labor input sheets by Distribution Department labor class. The top section of the labor input sheet for each RA labor class summarizes the regular time, nonproductive time, overtime and O&M/Capital % distribution. Please provide the following:

- a. Please explain how the O&M percentages (e.g., DA-Enablr 100%, DC-TCS 95%, DC-TECHCREW 65%) set forth on the labor input sheets for each RA labor class are used within Pillar, if at all, in determining the 2006 O&M expense forecast for the Distribution department.
- b. To the extent that the resource leveling report detail for the Distribution Department (see pages 157-169) identify different (e.g., higher or lower) labor hours attributable to capital projects, the effective O&M % would be different from the rates referenced in part (a) above. Please provide the following:
 1. Should the hours attributable to capital projects from the labor input sheets or the resource leveling reports be used to determine the O&M %? Please explain.
 2. If the response to part (b)(1) indicates that the labor hours from the resource leveling report should not be used, please explain the purpose of the resource leveling report and why it would be inappropriate to recognize the capital hours from that report.

HELCO Response:

- a. The percentages referenced are not inputted directly into the Pillar program. These percentages are used to determine O&M and clearing labor hours for each labor class and these labor hours are inputted into the Pillar program.
- b.
 1. The percentages are used to determine the HELCO O&M and clearing labor hours only. The percentages are based upon HELCO productive labor hours only and do not include contractor labor hours. Historically the percentages have been good predictors of HELCO labor hour requirements for O&M and clearing because contractors have been

used predominantly on capital related projects. Higher variability in capital project labor requirements and the use of contract labor for capital projects make it difficult to include the labor hours required for capital in the percentage mix, thus contractor labor hours are excluded when determining the percentages.

2. The resource leveling report has been used to provide a check for the separate O&M and clearing labor hour forecast done by the Distribution Department and the capital labor hour forecast done by the Engineering Department. The resource leveling report is reviewed during the forecasting process to evaluate staffing levels and contractor resources required to meet the forecasted O&M and capital work requirements. Historically the O&M and clearing labor projections have matched up better with actual performance thus the O&M and clearing labor projections have remained relatively fixed and capital labor projections are usually adjusted after the resource leveling reports are reviewed. The resource leveling reports are usually generated and reviewed only once during the annual forecasting process.

CA-IR-413

Ref: HELCO Response (T-6) to CA-IR-1 (T&D Direct Labor).

Referring to CA-IR-1, part (b), pages 29-100 appear to represent labor input sheets by Distribution labor class. The labor input sheets for certain labor classes attribute significant hours to Account 184.06 (e.g., DA-Enablr, DA-TC, DC-BUOC, DC-Facsup, etc.) or to Account 163 (e.g., DS-WAREH). Please provide the following:

- a. Please confirm that Pillar redistributes the labor dollars associated with the forecast labor hours assigned to Account 184.06 among and between the various Distribution O&M accounts. If this cannot be confirmed, please explain.
- b. Referring to the response to part (a) above, please explain the process by which the labor dollars associated with the forecast labor hours assigned to Account 184.06 are distributed among and between the various Distribution O&M accounts.
- c. Please confirm that Pillar redistributes the labor dollars associated with the forecast labor hours assigned to Account 163 among and between the various Distribution O&M accounts. If this cannot be confirmed, please explain.
- d. Referring to the response to part (c) above, please explain the process by which the labor dollars associated with the forecast labor hours assigned to Account 163 are distributed among and between the various Distribution O&M accounts.
- e. Please provide a copy of any documentation demonstrating the NARUC O&M account distribution process described in response to part (b) above. If such information has been previously supplied, please provide a pinpoint reference to the specific documents that show the distribution of the following labor classes:
 1. DA-Enablr;
 2. DDA-TC;
 3. DC-BUOC;
 4. DC-Facsup; and
 5. DS-WAREH.

HELCO Response:

- a. The account 184.060 is the Energy Delivery Clearing which is redistributed to O&M and Capital under expense element 404 (Energy Delivery Oncost) to each individual account

and/or activity using a rate in Pillar calculated by the HELCO Management Accounting Division and allocated based on labor hours and labor class.

- b. *The information was provided in response to part a.*
- c. The account 163.00 is the Stores Clearing which is redistributed to O&M and Capital under expense element 401 (Stores Oncost) to each individual account and/or activity using a rate in Pillar calculated by the HELCO Management Accounting Division and allocated based on material dollars. Since the majority of the material purchases are considered property units and are capitalized in the transmit and distribute area, the majority of the Stores Clearing is allocated to Capital and a small balance goes to O&M expense.
- d. *The information was provided in response to part c.*
- e. The allocation to the individual accounts and/or activities is shown in the 2006 test year forecast, under expense element 404 (Energy Delivery Oncost) and shown on HELCO-WP-101(I) Rate Case Non-Labor Oncost Report. All of the costs forecasted to account 184.060 are combined for both labor and non-labor and summarized into one rate in Pillar for the entire Company. The oncost is then allocated under expense element 404 automatically in Pillar for the forecast based on labor hours and the labor class.

CA-IR-414

Ref: HELCO Responses (T-6) to CA-IR-1, CA-IR-111 & HELCO-WP-101(F) (T&D Direct Labor).

Referring to CA-IR-1, part (b), pages 29-100 appear to represent labor input sheets by Distribution labor class. The response to CA-IR-111 (p.3) provides standard labor rates by labor class for 2006. Pages 628-651 of HELCO-WP-101(F) represent the rate case direct labor report for the Distribution department. Please provide the following:

- a. Please confirm that Pillar applies the 2006 standard labor rates from the response to CA-IR-111 to the labor hours set forth on the labor input sheets contained in CA-IR-1, part (b), to determine the direct labor dollars set forth in the referenced pages of HELCO-WP-(F). If this cannot be confirmed, please explain.
- b. For each Distribution RA, please provide the labor hours by labor class associated with each transmission and distribution O&M account. If the requested information is not available, please provide the following:
 1. Please explain why the requested information cannot be obtained from the Pillar system.
 2. Please explain how the Consumer Advocate can substantiate that the direct labor amounts set forth in the direct labor report (HELCO-WP-101(F)) are the result of applying the 2006 standard labor rates to the direct labor hours from the Distribution labor input sheets.

HELCO Response:

- a. Yes, this is correct.
- b. The requested report is attached. The first line for each transaction reflects the hours and the second line is the corresponding dollars. Columns G, H, I, and J are the direct labor expense included in the 2006 operating budget for Transmission Operation, Transmission Maintenance, Distribution Operation, and Distribution Maintenance block of accounts, respectively.

Hawaii Electric Light Company, Inc.

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
	Intermediate Code Descrip								
GL INT NARUC tion	NARUC Description	*EE #	*Labor Class #	*RA #	Trans Oper	Trans Maint	Dist Oper	Dist Maint	
560	OP SUPV & ENG-TRANS	150	__E	HDA		73			
560	OP SUPV & ENG-TRANS	150	__E	HDA	3,149.22				
560	OP SUPV & ENG-TRANS	150	__E-ED	HDA		0			
560	OP SUPV & ENG-TRANS	150	__E-ED	HDA		0			
560	OP SUPV & ENG-TRANS	150	__FS	HDC		22			
560	OP SUPV & ENG-TRANS	150	__FS	HDC	811.58				
560	OP SUPV & ENG-TRANS	150	__FS	HGA		271			
560	OP SUPV & ENG-TRANS	150	__FS	HGA	9997.19				
560	OP SUPV & ENG-TRANS	150	__FS-ED	HDK		0			
560	OP SUPV & ENG-TRANS	150	__FS-ED	HDK		0			
560	OP SUPV & ENG-TRANS	150	__FS-ED	HDR		0			
560	OP SUPV & ENG-TRANS	150	__FS-ED	HDR		0			
560	OP SUPV & ENG-TRANS	150	__TC-ED	HDA		0			
560	OP SUPV & ENG-TRANS	150	__TC-ED	HDA		0			
560	OP SUPV & ENG-TRANS	150	__TCS	HGA	1848				
560	OP SUPV & ENG-TRANS	150	__TCS	HGA	61150.32				
560	OP SUPV & ENG-TRANS	150	__TCS-ED	HDC		0			
560	OP SUPV & ENG-TRANS	150	__TCS-ED	HDC		0			
560	OP SUPV & ENG-TRANS	150	__TCS-ED	HDH		0			
560	OP SUPV & ENG-TRANS	150	__TCS-ED	HDH		0			
560	OP SUPV & ENG-TRANS	150	__TCS-ED	HDK	144				
560	OP SUPV & ENG-TRANS	150	__TCS-ED	HDK	4764.96				
560	OP SUPV & ENG-TRANS	150	__TCS-ED	HDR	12				
560	OP SUPV & ENG-TRANS	150	__TCS-ED	HDR	397.08				
560	OP SUPV & ENG-TRANS	150	__TCS-ED	HDW	252				
560	OP SUPV & ENG-TRANS	150	__TCS-ED	HDW	8338.68				
560	OP SUPV & ENG-TRANS	150	D_CREW	HDH		0			
560	OP SUPV & ENG-TRANS	150	D_CREW	HDH		0			
561	LOAD DISPATCH TMS C	150	__BUTC	HGH	5000				
561	LOAD DISPATCH TMS C	150	__BUTC	HGH	186500				
562	STATION EXP-TRANS O	150	D_CREW	HDH	108				
562	STATION EXP-TRANS O	150	D_CREW	HDH	3761.64				
562	STATION EXP-TRANS O	150	D_TECHCREW	HDC	821				
562	STATION EXP-TRANS O	150	D_TECHCREW	HDC	24055.3				
563	OH LINE EXP-TRANS OI	150	D_CREW	HDH	636				

Hawaii Electric Light Company, Inc.

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
	<u>Intermediate</u>								
	<u>Code</u>	<u>Descrip</u>							
<u>GL INT</u>	<u>NARUC</u>	<u>tion</u>	<u>NARUC</u>	<u>Description</u>	<u>*EE #</u>	<u>*Labor Class #</u>	<u>*RA #</u>	<u>Trans Oper</u>	<u>Trans Maint</u>
								<u>Dist Oper</u>	<u>Dist Maint</u>
	563		OH LINE EXP-TRANS OF	150 D_CREW	HDH		22151.88		
	563		OH LINE EXP-TRANS OF	150 D_CREW	HDK		324		
	563		OH LINE EXP-TRANS OF	150 D_CREW	HDK		11284.92		
	563		OH LINE EXP-TRANS OF	150 D_CREW	HDW		276		
	563		OH LINE EXP-TRANS OF	150 D_CREW	HDW		9613.08		
	563		OH LINE EXP-TRANS OF	150 D_INSPE	HDK		36		
	563		OH LINE EXP-TRANS OF	150 D_INSPE	HDK		1243.08		
	563		OH LINE EXP-TRANS OF	150 D_INSPE	HDR		624		
	563		OH LINE EXP-TRANS OF	150 D_INSPE	HDR		21546.72		
	563		OH LINE EXP-TRANS OF	150 D_INSPE	HDW		168		
	563		OH LINE EXP-TRANS OF	150 D_INSPE	HDW		5801.04		
	564		UG LINE EXP-TRANS OF	150 D_CREW	HDH		12		
	564		UG LINE EXP-TRANS OF	150 D_CREW	HDH		417.96		
	566		MISC TRANS OP EXP	150 D_CREW	HDH		36		
	566		MISC TRANS OP EXP	150 D_CREW	HDH		1253.88		
	566		MISC TRANS OP EXP	150 D_CREW	HDW		12		
	566		MISC TRANS OP EXP	150 D_CREW	HDW		417.96		
	566		MISC TRANS OP EXP	150 D_MAP	HDR		0		
	566		MISC TRANS OP EXP	150 D_MAP	HDR		0		
	566		MISC TRANS OP EXP	150 D_TECHCREW	HDC		1272		
	566		MISC TRANS OP EXP	150 D_TECHCREW	HDC		37269.6		
	568		MAINT SUPV/ENG-TRAN	150 __E	HDA			73	
	568		MAINT SUPV/ENG-TRAN	150 __E	HDA			3149.22	
	568		MAINT SUPV/ENG-TRAN	150 __E-ED	HDA			0	
	568		MAINT SUPV/ENG-TRAN	150 __E-ED	HDA			0	
	568		MAINT SUPV/ENG-TRAN	150 __FS	HDC			22	
	568		MAINT SUPV/ENG-TRAN	150 __FS	HDC			811.58	
	568		MAINT SUPV/ENG-TRAN	150 __FS-ED	HDK			0	
	568		MAINT SUPV/ENG-TRAN	150 __FS-ED	HDK			0	
	568		MAINT SUPV/ENG-TRAN	150 __TC-ED	HDA			240	
	568		MAINT SUPV/ENG-TRAN	150 __TC-ED	HDA			6854.4	
	569		MAINT SS STRUC-TRAN	150 D_CREW	HDH			36	
	569		MAINT SS STRUC-TRAN	150 D_CREW	HDH			1253.88	
	569		MAINT SS STRUC-TRAN	150 D_TECHCREW	HDC			100	
	569		MAINT SS STRUC-TRAN	150 D_TECHCREW	HDC			2930	

Hawaii Electric Light Company, Inc.

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	
	<u>Intermediate</u>									
	<u>Code</u>	<u>Descrip</u>								
<u>GL INT</u>	<u>NARUC</u>	<u>tion</u>	<u>Description</u>	<u>*EE #</u>	<u>*Labor Class #</u>	<u>*RA #</u>	<u>Trans Oper</u>	<u>Trans Maint</u>	<u>Dist Oper</u>	<u>Dist Maint</u>
	570		MAINT STA EQP-TRANS	150	D_CREW	HDH		384		
	570		MAINT STA EQP-TRANS	150	D_CREW	HDH		13374.72		
	570		MAINT STA EQP-TRANS	150	D_CREW	HDK		84		
	570		MAINT STA EQP-TRANS	150	D_CREW	HDK		2925.72		
	570		MAINT STA EQP-TRANS	150	D_CREW	HDW		120		
	570		MAINT STA EQP-TRANS	150	D_CREW	HDW		4179.6		
	570		MAINT STA EQP-TRANS	150	D_TECHCREW	HDC		4993		
	570		MAINT STA EQP-TRANS	150	D_TECHCREW	HDC		146294.9		
	571		MAINT OH LINES-TRAN:	150	D_CREW	HDH		1016		
	571		MAINT OH LINES-TRAN:	150	D_CREW	HDH		35387.28		
	571		MAINT OH LINES-TRAN:	150	D_CREW	HDK		456		
	571		MAINT OH LINES-TRAN:	150	D_CREW	HDK		15882.48		
	571		MAINT OH LINES-TRAN:	150	D_CREW	HDW		480		
	571		MAINT OH LINES-TRAN:	150	D_CREW	HDW		16718.4		
	571		MAINT OH LINES-TRAN:	150	D_INSPE	HDK		0		
	571		MAINT OH LINES-TRAN:	150	D_INSPE	HDK		0		
	571		MAINT OH LINES-TRAN:	150	D_INSPE	HDR		12		
	571		MAINT OH LINES-TRAN:	150	D_INSPE	HDR		414.36		
	571		MAINT OH LINES-TRAN:	150	D_TECHCREW	HDC		36		
	571		MAINT OH LINES-TRAN:	150	D_TECHCREW	HDC		1054.8		
	571		MAINT OH LINES-TRAN:	150	W_ENG	HWX		960		
	571		MAINT OH LINES-TRAN:	150	W_ENG	HWX		25449.6		
	572		MAINT UG LINES-TRAN:	150	D_CREW	HDH		156		
	572		MAINT UG LINES-TRAN:	150	D_CREW	HDH		5433.48		
	573		MAINT MISC TRANS PL	150	D_CREW	HDH		12		
	573		MAINT MISC TRANS PL	150	D_CREW	HDH		417.96		
	573		MAINT MISC TRANS PL	150	D_CREW	HDK		24		
	573		MAINT MISC TRANS PL	150	D_CREW	HDK		835.92		
	573		MAINT MISC TRANS PL	150	D_CREW	HDW		12		
	573		MAINT MISC TRANS PL	150	D_CREW	HDW		417.96		
	573		MAINT MISC TRANS PL	150	D_TECHCREW	HDC		4121		
	573		MAINT MISC TRANS PL	150	D_TECHCREW	HDC		120745.3		
	580		OPER SUPV & ENG-DIS	150	BUTC	HDS			0	
	580		OPER SUPV & ENG-DIS	150	BUTC	HDS			0	
	580		OPER SUPV & ENG-DIS	150	E	HDA			73	

Hawaii Electric Light Company, Inc.

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
	Intermediate Code Descrip								
GL INT NARUC tion	NARUC Description	*EE #	*Labor Class #	*RA #	Trans Oper	Trans Maint	Dist Oper	Dist Maint	
580	OPER SUPV & ENG-DIS	150	__E	HDA			3149.22		
580	OPER SUPV & ENG-DIS	150	__E-ED	HDA			0		
580	OPER SUPV & ENG-DIS	150	__E-ED	HDA			0		
580	OPER SUPV & ENG-DIS	150	__E-ED	HWA			0		
580	OPER SUPV & ENG-DIS	150	__E-ED	HWA			0		
580	OPER SUPV & ENG-DIS	150	__FS	HDC			22		
580	OPER SUPV & ENG-DIS	150	__FS	HDC			811.58		
580	OPER SUPV & ENG-DIS	150	__FS-ED	HDH			0		
580	OPER SUPV & ENG-DIS	150	__FS-ED	HDH			0		
580	OPER SUPV & ENG-DIS	150	__FS-ED	HDK			0		
580	OPER SUPV & ENG-DIS	150	__FS-ED	HDK			0		
580	OPER SUPV & ENG-DIS	150	__FS-ED	HDR			0		
580	OPER SUPV & ENG-DIS	150	__FS-ED	HDR			0		
580	OPER SUPV & ENG-DIS	150	__TC-ED	HDA			0		
580	OPER SUPV & ENG-DIS	150	__TC-ED	HDA			0		
580	OPER SUPV & ENG-DIS	150	__TC-ED	HWA			0		
580	OPER SUPV & ENG-DIS	150	__TC-ED	HWA			0		
580	OPER SUPV & ENG-DIS	150	__TC-ED	HWX			0		
580	OPER SUPV & ENG-DIS	150	__TC-ED	HWX			0		
580	OPER SUPV & ENG-DIS	150	__TCS	HDS			0		
580	OPER SUPV & ENG-DIS	150	__TCS	HDS			0		
580	OPER SUPV & ENG-DIS	150	__TCS-CE	HWK			0		
580	OPER SUPV & ENG-DIS	150	__TCS-CE	HWK			0		
580	OPER SUPV & ENG-DIS	150	__TCS-ED	HDC			0		
580	OPER SUPV & ENG-DIS	150	__TCS-ED	HDC			0		
580	OPER SUPV & ENG-DIS	150	__TCS-ED	HDH			0		
580	OPER SUPV & ENG-DIS	150	__TCS-ED	HDH			0		
580	OPER SUPV & ENG-DIS	150	__TCS-ED	HDK			240		
580	OPER SUPV & ENG-DIS	150	__TCS-ED	HDK			7941.6		
580	OPER SUPV & ENG-DIS	150	__TCS-ED	HDS			0		
580	OPER SUPV & ENG-DIS	150	__TCS-ED	HDS			0		
580	OPER SUPV & ENG-DIS	150	__TCS-ED	HDW			240		
580	OPER SUPV & ENG-DIS	150	__TCS-ED	HDW			7941.6		
580	OPER SUPV & ENG-DIS	150	D_CREW	HDK			24		
580	OPER SUPV & ENG-DIS	150	D_CREW	HDK			835.92		

Hawaii Electric Light Company, Inc.

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
GL INT	<u>Intermediate</u> <u>Code Descrip</u>	<u>NARUC Description</u>	<u>*EE #</u>	<u>*Labor Class #</u>	<u>*RA #</u>	<u>Trans Oper</u>	<u>Trans Maint</u>	<u>Dist Oper</u>	<u>Dist Maint</u>
580		OPER SUPV & ENG-DIS	150	D_CREW	HDW			360	
580		OPER SUPV & ENG-DIS	150	D_CREW	HDW			12538.8	
580		OPER SUPV & ENG-DIS	150	D_INSPE	HDR			116	
580		OPER SUPV & ENG-DIS	150	D_INSPE	HDR			4005.48	
580		OPER SUPV & ENG-DIS	150	D_INSPE	HDW			24	
580		OPER SUPV & ENG-DIS	150	D_INSPE	HDW			828.72	
580		OPER SUPV & ENG-DIS	150	W_ENG-ED	HWX			0	
580		OPER SUPV & ENG-DIS	150	W_ENG-ED	HWX			0	
582		STATION EXP-DIST OP	150	D_CREW	HDH			72	
582		STATION EXP-DIST OP	150	D_CREW	HDH			2507.76	
582		STATION EXP-DIST OP	150	D_CREW	HDK			60	
582		STATION EXP-DIST OP	150	D_CREW	HDK			2089.8	
582		STATION EXP-DIST OP	150	D_CREW	HDW			24	
582		STATION EXP-DIST OP	150	D_CREW	HDW			835.92	
582		STATION EXP-DIST OP	150	D_TECHCREW	HDC			1260	
582		STATION EXP-DIST OP	150	D_TECHCREW	HDC			36918	
583		OH LINE EXP-DIST OP	150	_BUTCED	HDR			0	
583		OH LINE EXP-DIST OP	150	_BUTCED	HDR			0	
583		OH LINE EXP-DIST OP	150	D_CREW	HDH			2052	
583		OH LINE EXP-DIST OP	150	D_CREW	HDH			71471.16	
583		OH LINE EXP-DIST OP	150	D_CREW	HDK			756	
583		OH LINE EXP-DIST OP	150	D_CREW	HDK			26331.48	
583		OH LINE EXP-DIST OP	150	D_CREW	HDW			312	
583		OH LINE EXP-DIST OP	150	D_CREW	HDW			10866.96	
583		OH LINE EXP-DIST OP	150	D_INSPE	HDK			84	
583		OH LINE EXP-DIST OP	150	D_INSPE	HDK			2900.52	
583		OH LINE EXP-DIST OP	150	D_INSPE	HDR			659.99	
583		OH LINE EXP-DIST OP	150	D_INSPE	HDR			22789.45	
583		OH LINE EXP-DIST OP	150	D_INSPE	HDW			168	
583		OH LINE EXP-DIST OP	150	D_INSPE	HDW			5801.04	
583		OH LINE EXP-DIST OP	150	D_TECHCREW	HDC			0	
583		OH LINE EXP-DIST OP	150	D_TECHCREW	HDC			0	
584		UG LINE EXP-DIST OP	150	D_CREW	HDH			180	
584		UG LINE EXP-DIST OP	150	D_CREW	HDH			6269.4	
584		UG LINE EXP-DIST OP	150	D_CREW	HDK			420	

Hawaii Electric Light Company, Inc.

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
	Intermediate Code Descrip								
GL INT NARUC	tion	NARUC Description	*EE #	*Labor Class #	*RA #	Trans Oper	Trans Maint	Dist Oper	Dist Maint
584		UG LINE EXP-DIST OP	150	D_CREW	HDK			14628.6	
584		UG LINE EXP-DIST OP	150	D_CREW	HDW			348	
584		UG LINE EXP-DIST OP	150	D_CREW	HDW			12120.84	
584		UG LINE EXP-DIST OP	150	D_INSPE	HDK			94	
584		UG LINE EXP-DIST OP	150	D_INSPE	HDK			3245.82	
584		UG LINE EXP-DIST OP	150	D_INSPE	HDR			415	
584		UG LINE EXP-DIST OP	150	D_INSPE	HDR			14329.95	
584		UG LINE EXP-DIST OP	150	D_INSPE	HDW			273	
584		UG LINE EXP-DIST OP	150	D_INSPE	HDW			9426.69	
586		METER EXP-DIST OP	150	_BUOC	HCR			4200	
586		METER EXP-DIST OP	150	_BUOC	HCR			104580	
586		METER EXP-DIST OP	150	D_CREW	HDH			2567.99	
586		METER EXP-DIST OP	150	D_CREW	HDH			89443.09	
586		METER EXP-DIST OP	150	D_CREW	HDK			813	
586		METER EXP-DIST OP	150	D_CREW	HDK			28316.79	
586		METER EXP-DIST OP	150	D_CREW	HDW			228	
586		METER EXP-DIST OP	150	D_CREW	HDW			7941.24	
586		METER EXP-DIST OP	150	D_CSM	HCK			2796	
586		METER EXP-DIST OP	150	D_CSM	HCK			66964.2	
586		METER EXP-DIST OP	150	D_CSM	HCW			1320	
586		METER EXP-DIST OP	150	D_CSM	HCW			31614	
586		METER EXP-DIST OP	150	D_TECHCREW	HDC			2976	
586		METER EXP-DIST OP	150	D_TECHCREW	HDC			87196.8	
587		CUST INSTALL EXP	150	_BUOC	HCR			24	
587		CUST INSTALL EXP	150	_BUOC	HCR			597.6	
587		CUST INSTALL EXP	150	_TCS	HCR			24	
587		CUST INSTALL EXP	150	_TCS	HCR			794.16	
587		CUST INSTALL EXP	150	D_CSM	HCK			36	
587		CUST INSTALL EXP	150	D_CSM	HCK			862.2	
587		CUST INSTALL EXP	150	D_CSM	HCW			12	
587		CUST INSTALL EXP	150	D_CSM	HCW			287.4	
588		MISC DISTR OP EXP	150	_BUOC	HDC			0	
588		MISC DISTR OP EXP	150	_BUOC	HDC			0	
588		MISC DISTR OP EXP	150	_BUOC	HDR			0	
588		MISC DISTR OP EXP	150	_BUOC	HDR			0	

Hawaii Electric Light Company, Inc.

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
	Intermediate Code Descrip								
GL INT	NARUC tion	NARUC Description	*EE #	*Labor Class #	*RA #	Trans Oper	Trans Maint	Dist Oper	Dist Maint
588		MISC DISTR OP EXP	150	__BUOCCE	HWA			0	
588		MISC DISTR OP EXP	150	__BUOCCE	HWA			0	
588		MISC DISTR OP EXP	150	__BUOCCE	HWK			0	
588		MISC DISTR OP EXP	150	__BUOCCE	HWK			0	
588		MISC DISTR OP EXP	150	__BUOCED	HDR			3375	
588		MISC DISTR OP EXP	150	__BUOCED	HDR			84037.5	
588		MISC DISTR OP EXP	150	__BUTCED	HDR			0	
588		MISC DISTR OP EXP	150	__BUTCED	HDR			0	
588		MISC DISTR OP EXP	150	__FS	HDA			0	
588		MISC DISTR OP EXP	150	__FS	HDA			0	
588		MISC DISTR OP EXP	150	__TCS	HDC			0	
588		MISC DISTR OP EXP	150	__TCS	HDC			0	
588		MISC DISTR OP EXP	150	__TCS	HDR			0	
588		MISC DISTR OP EXP	150	__TCS	HDR			0	
588		MISC DISTR OP EXP	150	__TCS	HWC			1500	
588		MISC DISTR OP EXP	150	__TCS	HWC			49635	
588		MISC DISTR OP EXP	150	D_CREW	HDH			636	
588		MISC DISTR OP EXP	150	D_CREW	HDH			22151.88	
588		MISC DISTR OP EXP	150	D_CREW	HDK			1716	
588		MISC DISTR OP EXP	150	D_CREW	HDK			59768.28	
588		MISC DISTR OP EXP	150	D_CREW	HDW			1440	
588		MISC DISTR OP EXP	150	D_CREW	HDW			50155.2	
588		MISC DISTR OP EXP	150	D_INSPE	HDR			12	
588		MISC DISTR OP EXP	150	D_INSPE	HDR			414.36	
588		MISC DISTR OP EXP	150	D_INSPE	HDW			12	
588		MISC DISTR OP EXP	150	D_INSPE	HDW			414.36	
588		MISC DISTR OP EXP	150	D_MAP	HDR			0	
588		MISC DISTR OP EXP	150	D_MAP	HDR			0	
588		MISC DISTR OP EXP	150	D_TECHCREW	HDC			192	
588		MISC DISTR OP EXP	150	D_TECHCREW	HDC			5625.6	
588		MISC DISTR OP EXP	150	D_WAREH	HDK			207	
588		MISC DISTR OP EXP	150	D_WAREH	HDK			5669.73	
588		MISC DISTR OP EXP	150	W_DP-CE	HWK			200.04	
588		MISC DISTR OP EXP	150	W_DP-CE	HWK			5861.17	
588		MISC DISTR OP EXP	150	W_SCP	HWC			500.04	

Hawaii Electric Light Company, Inc.

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
	Intermediate Code Descrip								
GL INT	NARUC tion	NARUC Description	*EE #	*Labor Class #	*RA #	Trans Oper	Trans Maint	Dist Oper	Dist Maint
588		MISC DISTR OP EXP	150	W_SCP	HWC			16936.35	
588		MISC DISTR OP EXP	150	W_TT	HWS			600	
588		MISC DISTR OP EXP	150	W_TT	HWS			20010	
590		MAINT SUPV/ENG-DIST	150	_E	HDA				73
590		MAINT SUPV/ENG-DIST	150	_E	HDA				3149.22
590		MAINT SUPV/ENG-DIST	150	_E-ED	HDA				0
590		MAINT SUPV/ENG-DIST	150	_E-ED	HDA				0
590		MAINT SUPV/ENG-DIST	150	_FS	HDC				22
590		MAINT SUPV/ENG-DIST	150	_FS	HDC				811.58
590		MAINT SUPV/ENG-DIST	150	_FS	HGA				193
590		MAINT SUPV/ENG-DIST	150	_FS	HGA				7119.77
590		MAINT SUPV/ENG-DIST	150	_FS-ED	HDK				0
590		MAINT SUPV/ENG-DIST	150	_FS-ED	HDK				0
590		MAINT SUPV/ENG-DIST	150	_TC-ED	HDA				492
590		MAINT SUPV/ENG-DIST	150	_TC-ED	HDA				14051.52
590		MAINT SUPV/ENG-DIST	150	_TCS	HGA				432
590		MAINT SUPV/ENG-DIST	150	_TCS	HGA				14294.88
590		MAINT SUPV/ENG-DIST	150	_TCS-ED	HDH				2.52
590		MAINT SUPV/ENG-DIST	150	_TCS-ED	HDH				83.39
590		MAINT SUPV/ENG-DIST	150	_TCS-ED	HDK				1.42
590		MAINT SUPV/ENG-DIST	150	_TCS-ED	HDK				46.99
590		MAINT SUPV/ENG-DIST	150	_TCS-ED	HDW				0
590		MAINT SUPV/ENG-DIST	150	_TCS-ED	HDW				0
590		MAINT SUPV/ENG-DIST	150	D_WAREH	HDW				12
590		MAINT SUPV/ENG-DIST	150	D_WAREH	HDW				328.68
591		MAINT STRUCT-DIST	150	D_CREW	HDH				72
591		MAINT STRUCT-DIST	150	D_CREW	HDH				2507.76
591		MAINT STRUCT-DIST	150	D_CREW	HDW				12
591		MAINT STRUCT-DIST	150	D_CREW	HDW				417.96
591		MAINT STRUCT-DIST	150	D_TECHCREW	HDC				36
591		MAINT STRUCT-DIST	150	D_TECHCREW	HDC				1054.8
592		MAINT SS EQP-DIST	150	D_CREW	HDH				228
592		MAINT SS EQP-DIST	150	D_CREW	HDH				7941.24
592		MAINT SS EQP-DIST	150	D_CREW	HDK				108
592		MAINT SS EQP-DIST	150	D_CREW	HDK				3761.64

Hawaii Electric Light Company, Inc.

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
	Intermediate Code Descrip								
GL INT	NARUC tion	NARUC Description	*EE #	*Labor Class #	*RA #	Trans Oper	Trans Maint	Dist Oper	Dist Maint
592		MAINT SS EQP-DIST	150	D_CREW	HDW				260.04
592		MAINT SS EQP-DIST	150	D_CREW	HDW				9057.19
592		MAINT SS EQP-DIST	150	D_INSPE	HDR				7
592		MAINT SS EQP-DIST	150	D_INSPE	HDR				241.71
592		MAINT SS EQP-DIST	150	D_TECHCREW	HDC				6336.05
592		MAINT SS EQP-DIST	150	D_TECHCREW	HDC				185646.27
593		MAINT OH LINES-DIST	150	D_CREW	HDH				8871.76
593		MAINT OH LINES-DIST	150	D_CREW	HDH				309003.4
593		MAINT OH LINES-DIST	150	D_CREW	HDK				4563
593		MAINT OH LINES-DIST	150	D_CREW	HDK				158929.29
593		MAINT OH LINES-DIST	150	D_CREW	HDW				4634
593		MAINT OH LINES-DIST	150	D_CREW	HDW				161402.22
593		MAINT OH LINES-DIST	150	D_INSPE	HDK				0
593		MAINT OH LINES-DIST	150	D_INSPE	HDK				0
593		MAINT OH LINES-DIST	150	D_INSPE	HDR				7
593		MAINT OH LINES-DIST	150	D_INSPE	HDR				241.71
593		MAINT OH LINES-DIST	150	D_INSPE	HDW				0
593		MAINT OH LINES-DIST	150	D_INSPE	HDW				0
593		MAINT OH LINES-DIST	150	D_TECHCREW	HDC				24
593		MAINT OH LINES-DIST	150	D_TECHCREW	HDC				703.2
594		MAINT UG LINES-DIST	150	TCS-ED	HDH				1.26
594		MAINT UG LINES-DIST	150	TCS-ED	HDH				41.69
594		MAINT UG LINES-DIST	150	D_CREW	HDH				1180.94
594		MAINT UG LINES-DIST	150	D_CREW	HDH				41132.14
594		MAINT UG LINES-DIST	150	D_CREW	HDK				3021
594		MAINT UG LINES-DIST	150	D_CREW	HDK				105221.43
594		MAINT UG LINES-DIST	150	D_CREW	HDW				804
594		MAINT UG LINES-DIST	150	D_CREW	HDW				28003.32
594		MAINT UG LINES-DIST	150	D_INSPE	HDK				22
594		MAINT UG LINES-DIST	150	D_INSPE	HDK				759.66
594		MAINT UG LINES-DIST	150	D_INSPE	HDR				24
594		MAINT UG LINES-DIST	150	D_INSPE	HDR				828.72
594		MAINT UG LINES-DIST	150	D_INSPE	HDW				0
594		MAINT UG LINES-DIST	150	D_INSPE	HDW				0
595		MAINT TRSFORM-DIST	150	D_CREW	HDH				893

Hawaii Electric Light Company, Inc.

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
	<u>Intermediate</u>								
<u>GL INT NARUC</u>	<u>Code Descrip</u>	<u>Description</u>	<u>*EE #</u>	<u>*Labor Class #</u>	<u>*RA #</u>	<u>Trans Oper</u>	<u>Trans Maint</u>	<u>Dist Oper</u>	<u>Dist Maint</u>
595		MAINT TRSFORM-DIST	150	D_CREW	HDH				31103.19
595		MAINT TRSFORM-DIST	150	D_CREW	HDK				178
595		MAINT TRSFORM-DIST	150	D_CREW	HDK				6199.74
595		MAINT TRSFORM-DIST	150	D_CREW	HDW				72
595		MAINT TRSFORM-DIST	150	D_CREW	HDW				2507.76
595		MAINT TRSFORM-DIST	150	D_INSPE	HDR				8
595		MAINT TRSFORM-DIST	150	D_INSPE	HDR				276.24
595		MAINT TRSFORM-DIST	150	D_INSPE	HDW				0
595		MAINT TRSFORM-DIST	150	D_INSPE	HDW				0
595		MAINT TRSFORM-DIST	150	D_TECHCREW	HDC				408
595		MAINT TRSFORM-DIST	150	D_TECHCREW	HDC				11954.4
597		MAINT METERS-DIST	150	D_TECHCREW	HDC				784
597		MAINT METERS-DIST	150	D_TECHCREW	HDC				22971.2
598		MAINT MISC DIST PLT	150	D_CREW	HDH				408
598		MAINT MISC DIST PLT	150	D_CREW	HDH				14210.64
598		MAINT MISC DIST PLT	150	D_CREW	HDW				84
598		MAINT MISC DIST PLT	150	D_CREW	HDW				2925.72
598		MAINT MISC DIST PLT	150	D_INSPE	HDW				0
598		MAINT MISC DIST PLT	150	D_INSPE	HDW				0
598		MAINT MISC DIST PLT	150	D_WAREH	HDK				36
598		MAINT MISC DIST PLT	150	D_WAREH	HDK				986.04
Total Hours						11,947.0	13,337.0	33,664.1	34,311.0
Total Direct Labor \$'s						\$ 413,926	\$ 404,532	\$ 1,019,863	\$ 1,149,916

Note:

Transmission Operation Direct Labor \$ - total agrees with HELCO-WP-101(F), page 630

Transmission Maintenance Direct Labor \$ - total agrees with HELCO-WP-101(F), page 635

Distribution Operation Direct Labor \$ - total agrees with HELCO-WP-101(F), page 643

Distribution Maintenance Direct Labor \$ - total agrees with HELCO-WP-101(F), page 651

CA-IR-415

Ref: HELCO Responses (T-6) to CA-IR-1 & CA-IR-86 (T&D Overtime).

Page 5 of the response to CA-IR-86 represents an update of HELCO-608. For the identified Technical Division crews, the 2006 forecast overtime hours tie to CA-IR-1, part (b) (pages 43, 55, 71 & 94). However, the straight time hours only tie for HDC-TECHCREW and HDW-CREW. Please provide the following:

- a. Please confirm that the forecast straight time hours should tie to the number of annual regular work hours (2080) less nonproductive time for all employees in each work group. If this cannot be confirmed, please explain.
- b. Referring to CA-IR-86, page 5, please describe and reconcile the difference between the HDH-CREW straight time hours of 53,188 and the 55,176 straight time hours set forth on CA-IR-1, part (b), page 55.
- c. Referring to CA-IR-86, page 5, please describe and reconcile the difference between the HDK-CREW straight time hours of 33,732 and the 37,584 straight time hours set forth on CA-IR-1, part (b), page 71.

HELCO Response:

- a. Yes, the forecast straight time hours should tie to the number of annual regular work hours (2080) less nonproductive time (i.e. holiday, vacation, sick) for all employees in each work group. CA-IR-1, part (b) (pages 43, 55, 71 and 94) supplied the unadjusted forecast information. The information supplied in CA-IR-86 is the adjusted forecast information which is why HDH-CREW and HDK-CREW straight time hours shown on CA-IR-86, page 5 does not tie to CA-IR-1, part (b) pages 55 and 71. The work sheet for these adjustments were provided in CA-IR-1, part b, page 214 for HDH – CREW and page 230 for HDK-CREW.
- b. As described in the response to part a, the HDH-CREW straight time hours of 53,188 in CA-IR-86, page 5 is the adjusted forecast information and the HDH-CREW straight time hours of 55,176 in CA-IR-1, part (b), page 55 is the unadjusted forecast information. The

work sheet for the adjusted HDH-CREW straight time information is found in CA-IR-1, part b, page 214. The adjustment was made to reflect the hiring of 2 additional trouble inspectors in HDH-CREW in July of 2006 instead of January 2006.

- c. As described in the response to part a., the HDK-CREW straight time hours of 33,732 in CA-IR-86, page 5 is the adjusted forecast information and the HDK-CREW straight time hours of 37,584 in CA-IR-1, part (b), page 71 is the unadjusted forecast information. The work sheet for the adjusted HDK-CREW straight time information is found in CA-IR-1, part b, page 230. The adjustment was made to reflect the hiring of 2 additional trouble inspectors in HDK-CREW in July of 2006 instead of January 2006, and the hiring of an Administrative Assistant in 2006 instead of a lineman.

CA-IR-416

Ref: T-6, HELCO-611 & Response to CA-IR-96 (Distribution Staffing).

HELCO's response to CA-IR-96 (pages 2-9) updated HELCO-611 for actual 2006 monthly employee counts through June 2006. Please provide a further update of CA-IR-96 to reflect monthly distribution department employee counts through September 2006.

HELCO Response:

An updated version of HELCO-611 for actual 2006 monthly employee counts through September 2006 is supplied as pages 2 – 9 of this response.

Hawaii Electric Light Company

Distribution Department

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept				Sep-06
		2006	2006	2006	2006	2006	2006	2006	2006	2006	2006	2006	2006	2006 TY
		Total	Total	Total	Total	Total	Total	Total	Total	Total	Budget	Bud Adj	Test Year	Diff
DIVISIONS:														
Administration	HDA	5	5	5	5	5	6	5	5	5	4	0	4	(1)
Technical	HDC	23	23	23	23	23	23	23	23	23	25	0	25	2
Hilo C&M	HDH	30	30	30	30	31	32	32	32	31	34	0	34	3
Kona C&M	HDK	21	21	21	22	21	20	19	19	19	27	0	27	8
Operations	HDR	9	9	9	9	9	10	10	10	10	9	0	9	(1)
Stores	HDS	6	7	7	7	7	7	7	7	7	7	1	8	1
Waimea C&M	HDW	14	14	14	14	14	14	14	14	14	16	0	16	2
		108	109	109	110	110	112	110	110	109	122	1	123	14

Administration Employee Count

CA-IR-416
DOCKET NO. 05-0315
PAGE 3 OF 9
HELCO-611
Updated (10/24/06)

Technical Division Employee Count

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DOCKET NO. 05-0315
PAGE 4 OF 9
HELCO-611
Updated (10/24/06)

Hawaii Electric Light Company														
Hilo C&M Employee Count														
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept				Sep-06
		2006	2006	2006	2006	2006	2006	2006	2006	2006	2006	2006	2006	2006 TY
Position	FA	Total	Total	Total	Total	Total	Total	Total	Total	Total	Budget	Bud Adj	Test Year	Diff
Construction & Maintenance	HDH													
Superintendent, C&M		1	1	1	1	1	1	1	1	1	1	0	1	0
Assistant Superintendent, C&M		2	2	2	2	2	2	2	2	2	2	0	2	0
Working Foreman		3	3	3	3	3	3	3	3	3	4	0	4	1
Lineman		12	12	12	12	13	13	15	15	14	13	0	13	(1)
Apprentice		3	8	8	8	8	8	7	7	7	3	0	3	(4)
Troubleman-Inspector		2	2	2	2	2	2	2	2	2	4	0	4	2
Serviceman		2	2	2	2	2	2	2	2	2	2	0	2	0
Senior Helpers		5	0	0	0	0	1	0	0	0	5	0	5	5
Helpers		0	0	0	0	0	0	0	0	0	0	0	0	0
		30	30	30	30	31	32	32	32	31	34	0	34	3

CA-IR-416
 DOCKET NO. 05-0315
 PAGE 5 OF 9
 HELCO-611
 Updated (10/24/06)

Hawaii Electric Light Company

Kona C&M Employee Count

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept				Sep-06
		2006	2006	2006	2006	2006	2006	2006	2006	2006	2006	2006	2006	2006 TY
Position	RA	Total	Total	Total	Total	Total	Total	Total	Total	Total	Budget	Bud Adj	Test Year	Diff
Construction & Maintenance - Superintendent, C&M	HDK	0	0	0	0	0	0	0	0	0	1	0	1	1
Assistant Superintendent, C&M		2	2	2	2	2	2	2	2	2	2	0	2	0
Administrative Assistant		0	0	0	1	1	1	1	1	1	0	1	1	0
Staff Engineer		0	0	0	0	0	0	0	0	0	1	0	1	1
Working Foreman		3	3	3	3	3	3	3	3	3	3	0	3	0
Lineman		5	5	5	5	4	4	4	4	3	5	(1)	4	1
Apprentice		3	3	4	4	4	4	5	5	5	3	0	3	(2)
Troubleman-Inspector		2	2	2	2	2	2	2	2	2	4	0	4	2
Serviceman		1	1	1	1	1	1	0	0	1	1	0	1	0
Senior Inspector		1	1	1	1	1	1	1	1	1	1	0	1	0
Senior Helpers		3	3	2	2	2	1	0	0	0	5	0	5	5
Helpers		0	0	0	0	0	0	0	0	0	0	0	0	0
Warehouse/Tool Room Attendant		1	1	1	1	1	1	1	1	1	1	0	1	0
		21	21	21	22	21	20	19	19	19	27	0	27	8

Hawaii Electric Light Company

Operations Employee Count

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept				Sep-06
		2006	2006	2006	2006	2006	2006	2006	2006	2006	2006	2006	2006	2006 TY
Position	RA	Total	Total	Total	Total	Total	Total	Total	Total	Total	Budget	Bud Adj	Test Year	Diff
Operations -	HDR													
Asst. Tech Superintendent, Operations		1	1	1	1	1	1	1	1	1	1	0	1	0
Clerk Dispatcher		1	1	1	1	1	1	1	1	1	1	0	1	0
Shift Clerk Dispatcher		5	5	5	5	5	6	6	6	6	5	0	5	(1)
Mapper		0	0	0	0	0	0	0	0	0	0	0	0	0
Senior Inspector		1	1	1	1	1	1	1	1	1	1	0	1	0
Inspector		1	1	1	1	1	1	1	1	1	1	0	1	0
		9	9	9	9	9	10	10	10	10	9	0	9	(1)

Hawaii Electric Light Company

Stores Employee Count

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept				
		2006	2006	2006	2006	2006	2006	2006	2006	2006	2006	2006	2006	2006 TY
<u>Position</u>	<u>PA</u>	<u>Total</u>	<u>Total</u>	<u>Total</u>	<u>Total</u>	<u>Total</u>	<u>Total</u>	<u>Total</u>	<u>Total</u>	<u>Total</u>	<u>Budget</u>	<u>Bud Adj</u>	<u>Test Year</u>	<u>Diff</u>
Stores -	HDS													
Supervisor, Stores		1	1	1	1	1	1	1	1	1	1	0	1	0
Senior Warehouse Attendant		1	1	1	1	1	1	1	1	1	1	0	1	0
Warehouse Attendant		2	2	2	2	2	2	2	2	2	2	0	2	0
Toolroom Attendant Repairer		0	1	1	1	1	1	1	1	1	1	0	1	0
Materials Coordinator		1	1	1	1	1	1	1	1	1	1	0	1	0
Helper		0	0	0	0	0	0	0	0	0	0	0	0	0
Warehouse Toolroom Attendant Keahole		0	0	0	0	0	0	0	0	0	0	1	1	1
Store Keeper		1	1	1	1	1	1	1	1	1	1	0	1	0
		6	7	7	7	7	7	7	7	7	7	1	8	1

Hawaii Electric Light Company														
Waimea Employee Count														
Position	PA	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	2006	Bud Adj	2006	2006 TY
	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Test Year			Dff
Waimea -	HDW													
Assistant Superintendent		1	1	1	1	1	1	1	1	1	1	0	1	0
Working Foreman		2	2	2	2	2	2	2	2	2	2	0	2	0
Lineman		3	3	3	3	3	3	4	4	4	5	0	5	1
Senior Inspector		1	1	1	1	1	1	1	1	1	1	0	1	0
Trouble Inspector		1	1	1	1	1	1	1	1	1	1	0	1	0
Serviceman		1	1	1	1	1	1	1	1	1	1	0	1	0
Apprentice		2	2	3	3	3	3	3	3	3	2	0	2	(1)
Senior Helper		2	2	1	1	1	1	0	0	0	2	0	2	2
Helper		0	0	0	0	0	0	0	0	0	0	0	0	0
Warehouse/Tool Room/Attendant		1	1	1	1	1	1	1	1	1	1	0	1	0
		14	14	14	14	14	14	14	14	14	16	0	16	2

CA-IR-417

Ref: T-6, HELCO-611 & Response to CA-IR-96 (Distribution Staffing).

HELCO's response to CA-IR-96 (pages 2-9) updated HELCO-611 for actual 2006 monthly employee counts through June 2006. According to this response, the Distribution Department total employee count was 112 (June 2006) as compared to 123 employees included in the 2006 test year forecast. The actual employee number for RA:HDC includes three (3) apprentice electrician positions in the months of February – June 2006, while the 2006 test year forecast included one (1) employee in that position. Please provide the following:

- a. Please explain why HELCO hired two (2) additional apprentice electricians than was included in the test year forecast.
- b. How long does the electrician apprenticeship last?
- c. Is the pay scale for electrician apprentices less than full time electrician positions? Please explain and provide comparative labor rates.

HELCO Response:

- a. HELCO uses an apprenticeship program to train non-qualified employees to become Substation and Communications Electricians. Employees without Electrician qualifications enter RA:HDC as Helpers. After approximately six months of on-the-job experience, they are promoted to Senior Helper if they demonstrate satisfactory performance. After a short period as a Senior Helper they are indentured into the HELCO Apprentice Program as an Apprentice if they demonstrate satisfactory performance. It takes approximately three years to complete the Apprenticeship Program and become a Journeyman Electrician.

Apprentices, Senior Helpers, and Helpers are transitory positions used to train employees to become Journey level employees. HELCO expects all Helpers, Senior Helpers, and Apprentices to eventually complete the Apprentice Program and become qualified Journeymen. The Test Year forecast estimates the number of Apprentices, Senior Helpers, and Helpers expected in the Test Year but the actual numbers vary as employees progress

through the training program. As of June 2006, there were two more Apprentices than forecasted but there were also two less Helpers than forecasted making the total number of Apprentices, Senior Helpers, and Helpers match to the 2006 Test Year forecast.

- b. As stated earlier in this response, the HELCO Apprenticeship Program for Substation and Communications Electricians takes approximately three years to complete from the time of indenture.
- c. Yes, the pay scale for Electrician Apprentices is less than full-time Electrician positions. Apprentices are paid a percentage of the Journey level Electrician's rate based upon the number of on-the-job training hours successfully completed. The scale is shown below:

First 1000 hours	69%
1001 to 2000 hours	73%
2001 to 3000 hours	76%
3001 to 4000 hours	79%
4001 to 5000 hours	82%
5001 to 6000 hours	85%

It should be noted that standard labor rates are used to estimate and cost labor hours. In RA:HDC, Working Foremen, Electricians, Linemen, Apprentices, Senior Helpers, and Helpers are all grouped into labor class "D_Techcrew" and the same labor rate is used for all of these positions for estimating and costing purposes.

CA-IR-418

Ref: T-6, HELCO-611 & Response to CA-IR-96 (Distribution Staffing).

HELCO's response to CA-IR-96 (pages 2-9) updated HELCO-611 for actual 2006 monthly employee counts through June 2006. According to this response, the Distribution Department total employee count was 112 (June 2006) as compared to 123 employees included in the 2006 test year forecast. The actual employee number for RA:HDH includes eight (8) apprentice positions in the months of February – June 2006, while the 2006 test year forecast included three (3) employees in that position. Please provide the following:

- a. Please explain why HELCO hired five (5) additional apprentices than included in the test year forecast.
- b. Please identify the full-time HDH positions the eight (8) apprentices were hired to train for.
- c. How long does each apprenticeship last?
- d. Is the pay scale for apprentice positions less than the comparable full time position? Please explain and provide comparative labor rates.

HELCO Response:

- a. HELCO uses an apprenticeship program to train non-qualified employees for Lineman positions. Employees without Lineman qualifications enter RA:HDH as Senior Helpers. If they demonstrate satisfactory performance as a Senior Helper during approximately six months of on-the-job training, they are indentured into the HELCO Apprenticeship Program as an Apprentice. It takes approximately three years to complete the Apprenticeship Program and become a Journeyman Lineman. Apprentices and Senior Helpers are transitory positions to train employees to become Journey level employees. HELCO expects all Senior Helpers and Apprentices to eventually complete the Apprentice Program and become qualified Journeymen. The Test Year forecast estimates the number of Apprentices and Senior Helpers expected in the Test Year but the actual numbers vary as the employees progress through the training program. As of June 2006, there were five more Apprentices

than forecasted but it should also be noted that there were four less Senior Helpers than forecasted as Senior Helpers were converted to Apprentices.

- b. The Apprentices were indentured to train for Lineman positions.
- c. As stated earlier in this response, the HELCO Apprenticeship Program for Linemen takes approximately three years to complete.
- d. Yes. The pay scale for Lineman Apprentices is less than full-time Lineman positions. Apprentices are paid a percentage of the Journey level Lineman's rate based upon the number of on-the-job training hours successfully completed. The scale is shown below:

First 1000 hours	69%
1001 to 2000 hours	73%
2001 to 3000 hours	76%
3001 to 4000 hours	79%
4001 to 5000 hours	82%
5001 to 6000 hours	85%

It should be noted that standard labor rates are used to estimate and cost labor hours. In RA:HDH, Working Foremen, Linemen, Apprentices, Senior Helpers and Helpers are all grouped into labor class "D_Crew" and the same labor rate is used for all of these positions for estimating and costing purposes.

CA-IR-419

Ref: T-6, HELCO-611 & Response to CA-IR-96 (Distribution Staffing).

HELCO's response to CA-IR-96 (pages 2-9) updated HELCO-611 for actual 2006 monthly employee counts through June 2006. According to this response, the Distribution Department total employee count was 112 (June 2006) as compared to 123 employees included in the 2006 test year forecast. The actual employee number for RA:HDK includes four (4) apprentice positions in the months of March – June 2006, while the 2006 test year forecast included three (3) employees in that position. Please provide the following:

- a. Please explain why HELCO hired one (1) additional apprentice than included in the test year forecast.
- b. Please identify the full-time HDK positions the four (4) apprentices were hired to train for.
- c. How long does each apprenticeship last?
- d. Is the pay scale for apprentice positions less than the comparable full time position? Please explain and provide comparative labor rates.

HELCO Response:

- a. HELCO uses an apprenticeship program to train non-qualified employees for Linemen positions. Employees without Lineman qualifications enter RA:HDK as Senior Helpers. If they demonstrate satisfactory performance as a Senior Helper during approximately six months of on-the-job training, they are indentured into the HELCO Apprenticeship Program as an Apprentice. It takes approximately three years to complete the Apprenticeship Program and become a Journeyman Lineman. Apprentices and Senior Helpers are transitory positions to train employees to become Journey level employees. HELCO expects all Senior Helpers and Apprentices to eventually complete the Apprentice Program and become qualified Journeymen. The Test Year forecast estimates the number of Apprentices and Senior Helpers expected in the Test Year but the actual numbers vary as the employees progress through the training program. As of June 2006, there was one more Apprentice

than forecasted but it should also be noted that there were four less Senior Helpers than forecasted.

- b. The HDK Apprentices were indentured to train for Lineman positions.
- c. As stated earlier in this response, the HELCO Apprenticeship Program for Linemen takes approximately three years to complete.
- d. Yes, the pay scale for Lineman apprentices is less than full-time Lineman positions.

Apprentices are paid a percentage of the Journey level Lineman's rate based upon the number of on-the-job training hours successfully completed. The scale is shown below:

First 1000 hours	69%
1001 to 2000 hours	73%
2001 to 3000 hours	76%
3001 to 4000 hours	79%
4001 to 5000 hours	82%
5001 to 6000 hours	85%

It should be noted that standard labor rates are used to estimate and cost labor hours. In RA: HDK, Working Foremen, Electricians, Linemen, Apprentices, Senior Helpers and Helpers are all grouped into labor class "D_Crew" and the same labor rate is used for all of these positions for estimating and costing purposes.

CA-IR-420

Ref: T-6, HELCO-611 & Response to CA-IR-96 (Distribution Staffing).

HELCO's response to CA-IR-96 (pages 2-9) updated HELCO-611 for actual 2006 monthly employee counts through June 2006. According to this response, the Distribution Department total employee count was 112 (June 2006) as compared to 123 employees included in the 2006 test year forecast. The actual employee number for RA:HDW includes three (3) apprentice positions in the months of March – June 2006, while the 2006 test year forecast included two (2) employees in that position. Please provide the following:

- a. Please explain why HELCO hired one (1) additional apprentice than included in the test year forecast.
- b. Please identify the full-time HDW positions the four (4) apprentices were hired to train for.
- c. How long does each apprenticeship last?
- d. Is the pay scale for apprentice positions less than the comparable full time position? Please explain and provide comparative labor rates.

HELCO Response:

- a. HELCO uses an apprenticeship program to train non-qualified employees for Lineman positions. Employees without Lineman qualifications enter RA:HDW as Senior Helpers. After approximately six months they are indentured into the Apprenticeship Program as an Apprentice if they demonstrate satisfactory performance as a Senior Helper. It takes approximately three years to complete the HELCO Apprenticeship Program and become a Journeyman Lineman. Apprentices and Senior Helpers are transitory positions to train employees to become Journey level employees. HELCO expects all Senior Helpers and Apprentices to eventually complete the Apprentice Program and become qualified Journeymen. The Test Year forecast estimates the number of Apprentices and Senior Helpers expected in the Test Year but the actual numbers vary as the employees progress through the training program. As of June 2006, there was one more Apprentice than

forecasted but it should also be noted that there was one less Senior Helper than forecasted as employees were indentured.

- b. The Apprentices in RA:HDW were indentured to fill Lineman positions.
- c. As stated earlier in this response, it takes approximately three years from the time of indenture to complete the Apprentice Program.
- d. Yes, the pay scale for Lineman apprentices is less than full-time Lineman positions.

Apprentices are paid a percentage of the Journey level Lineman's rate based upon the number of on-the-job training hours successfully completed. The scale is shown below:

First 1000 hours	69%
1001 to 2000 hours	73%
2001 to 3000 hours	76%
3001 to 4000 hours	79%
4001 to 5000 hours	82%
5001 to 6000 hours	85%

It should be noted that standard labor rates are used to estimate and cost labor hours. In RA:HDW, Working Foremen, Electricians, Linemen, Apprentices, Senior Helpers and Helpers are all grouped into labor class "D_Crew" and the same labor rate is used for all of these positions for estimating and costing purposes.

CA-IR-421

Ref: HELCO-106, pages 47-58, Time of Use Rates Response (T-6) to CA-IR-1 (T&D Direct Labor).

Please explain the Company's promotion and implementation plan for the newly proposed time of use rates, indicating how customers in each rate class will be advised of the availability of TOU rates and informed regarding potential savings that are achievable. Provide copies of all documents prepared for such promotion/implementation effort.

HELCO Response:

At this time, the Company does not have a "formal promotion and implementation plan" for the proposed time of use rates. Typically when new rates are approved by the Commission a rates brochure that outlines the new rates is included as a bill insert into customer bills shortly thereafter. Potential savings will vary on a customer by customer basis, but all customers will be encouraged to call HELCO to discuss their questions on the new rates.

CA-IR-422

Ref: T-8, page 21 and HELCO Response to CA-IR-267, parts e and f; Expansion of REWH Program.

After listing REEPAH options that were considered in part (e), the Company states in response to part (f), "Of the elements described in response to part (e), HELCO has now focused its efforts on the residential grant program. HELCO may broaden the solar water heater grant program to allow proposals for other types of residential energy efficiency measured besides solar heaters." Please provide the following:

- a. State and describe each option being considered to "broaden the solar water heater grant program."
- b. For each option described in response to part (a), explain the specific changes needed to existing REWH program parameters to enable the option to be offered by HELCO.
- c. Explain each reason why the broadening of REWH and all other new incentives or buy-downs should not be considered within the "next rate case, DSM program application, or other appropriate proceeding" that is referenced by T-8 at page 21, lines 6-11, consistent with the intent of D&O 22420?

HELCO Response:

- a. The means to "broaden the solar water heater grant program" is via the development of the Draft Program Rules of REEPAH that is in HELCO's response to CA-IR-242, pages 3 through 7. Paragraph B.2.i of the draft rules states: "The project must be for the purchase of a renewable energy system or to implement energy efficiency measures in residential new construction developments." Based on its discussions to date with the Waikoloa Employee Housing Project developer, HELCO continues to think that solar water heating is the most likely renewable energy option to be incorporated in that project and other affordable housing projects. But HELCO does not wish to restrict the County of Hawaii nor other developers to solely that option. HELCO would be willing to consider other proposals, for options such as energy-efficient lighting and space cooling measures, window film and building insulation, Energy Star appliances, etc., to provide grants to affordable housing projects in REEPAH. HELCO has not prescribed these options nor proscribed any others. HELCO's participation in the planning

process to incorporate renewable energy and energy efficiency measures in the Waikoloa Employee Housing Project is described in HELCO's response to CA-IR-351, and is ongoing.

b. The reference in CA-IR-267 subpart e to "the solar water heater grant program" was specifically in reference to HELCO's proposed REEPAH options and not to HELCO's existing REWH program.

c. The testimony in HELCO T-8 at page 21, lines 6-11, refers specifically to "DSM programs" and does not state the inclusion of "all other new incentives or buy-downs" in a broad definition of DSM for purposes of program cost recovery. HELCO's position, as explained in HELCO's response to CA-IR-241, is that elements of the proposed REEPAH can not be provided within the context of HELCO's DSM programs, and the referenced testimony was not intended to apply to REEPAH. Therefore HELCO does not believe REEPAH cost recovery should be considered according to D&O 22420, and HELCO is seeking neither lost margins nor utility incentives for REEPAH.

CA-IR-423

Ref: HELCO Responses to CA-IR-84, CA-IR-111 & CA-IR-112 (Standard Labor Rates).

The response to CA-IR-84 discusses the process followed by the Distribution Department in assisting Management Accounting with adjusting 2004 employee wages and hours to develop the 2006 standard labor rates. CA-IR-111(e) sought a copy of the documentation supporting the development of the 2004 standard labor rates. CA-IR-112(a) requested the integrated spreadsheet files used to develop the standard labor rates HELCO used in preparing the 2006 rate case test year forecast. It is unclear how 2004 actual wages and dollars were actually adjusted in developing the 2006 standard labor rates. Please provide the following:

- a. In response to CA-IR-112, HELCO provided a spreadsheet file ("CA-IR-112,p2-15.xls"). In the spreadsheet file, certain cells are highlighted in "yellow." Please explain the significance of the highlighted items.
- b. Referring to HELCO's response to CA-IR-112, the font color for certain rows of the HELCO spreadsheet file ("CA-IR-112,p2-15.xls") was changed from "black" to "red." Please explain the significance of these items.
- c. To the extent that employees who were full time in 2006 only worked part of the year in 2004, please explain how HELCO adjusted the 2004 actual results to reflect a full year of wages and hours. In responding hereto, please provide three examples of this adjustment process, using the 2004 actual data provided in response to CA-IR-111 and the adjusted data set forth in response to CA-IR-112.
- d. To the extent that new employee positions were forecasted to be filled in 2006, but the positions were not filled in any part of 2004, please explain how HELCO adjusted the 2004 actual results to reflect a full year of wages and hours for each position. In responding hereto, please provide three examples of this adjustment process, using data provided in response to CA-IR-111 and CA-IR-112.

HELCO's Response:

- a. The significance of the highlighted "yellow" information in HELCO's response to CA-IR-112, part a. is as follows:

Page 7 – 16, "Prod Hrs" and "Amount" columns – These columns were highlighted by HELCO's Accounting Department prior to the standard labor rate worksheet being sent out to the departments for the departments' review and modification. These two columns were highlighted in "yellow" by the Accounting Department to indicate to the departments that the labor (productive) hours and amount columns were the primary (but not necessarily the only) areas where modifications were to be made to the worksheet.

Page 7 - 16, all other highlighted "yellow" or changed from "black" to "red" cells –

In general, except for the highlighted "yellow" information discussed above, all information highlighted "yellow" or changed from "black" to "red" on pages 3 – 16 represent modifications made to the standard labor rate worksheet initially sent out by the Accounting Department for each department's review and modification of the payroll information. For example, on page 7 where "MANAGER, CUSTOMER SERVICES" was highlighted, the department (i.e. Customer Services Department) indicated that a change was made to the file that was initially sent out by the Accounting Department for the departments' review and modification. In this case, the title of the position was initially "MANAGER, ACCOUNTING" on the file and it was modified by the Customer Services Department to "MANAGER, CUSTOMER SERVICES". The current Manager of Customer Services was previously the Manager of Accounting in the 2004 payroll register.

- b. See HELCO's response to item a. above.
- c. For employees who were projected to be full time in 2006 but only worked part of the year in 2004, in order to adjust the 2004 actual results to reflect a full year of wages and hours, each department took the partial year information that was provided the Accounting Department and generally (1) estimated a reasonable amount of productive hours for 2004 (based on available hours, allowance for non-productive hours, and estimated overtime hours, if applicable) and applied a reasonable wage rate or (2) utilized the historical 2004 payroll information for a similar type position to arrive at a reasonable estimate of what a full year of wages and hours would be for 2004.

Three examples of how this was accomplished is as follows:

1. District Clerk I position, EE #34795, page 12, lines 33 - 35 of HELCO's response to CA-IR-111

The total for this employee based on the 2004 payroll information is -

	<u>Amount</u>	<u>Prod Hours</u>
Regular Earnings	\$13,195.76	827.0
Meals	\$ 12.00	0.0
Pre/Post Roster OT @ 1.5X	<u>\$ 221.05</u>	<u>9.4</u>
Total	<u>\$13,428.81</u>	<u>836.4</u>

The above information was provided by HELCO's Accounting Department in conjunction with forwarding the standard labor rate worksheet to the Customer Services Department for review and modification. Since the above payroll information represented only a partial year of wages and hours for the District Clerk position, HELCO's Customer Services Department proceeded to adjust that partial year information to reflect a full year of wages and hours as follows -

Available Hours	2,080
Less: Vacation and Holiday Hours	(232)
Estimated Productive Hours	1,848
Hours Used – Reasonable Estimate	1,820 – Per CA-IR-112, page 10, 17 th line
Estimated Wage Rate	\$16.48 per hour**
Estimated Wage Amount	\$30,000.00 – Per CA-IR-112, page 10, 17 th line

** District Clerk I position for the period 11/1/03 – 10/31/04 ranges from \$15.60 - \$19.80 per bargaining unit contract.

2. Receptionist/Clerk position, EE #34884, page 12, line 36 of HELCO's response to CA-IR-111

The total for this employee based on the 2004 payroll information is -

	<u>Amount</u>	<u>Prod Hours</u>
Regular Earnings	<u>\$ 4,724.00</u>	<u>392.0</u>

The above information was provided by HELCO's Accounting Department in conjunction with forwarding the standard labor rate worksheet to the Engineering Department for review and modification. Since the above payroll information represented only a partial year of wages and hours for the Receptionist/Clerk position, HELCO's Engineering Department proceeded to adjust that partial year information to reflect a full year of wages and hours as follows -

Available Hours	2,080
Less: Vacation and Holiday Hours	(192)
Estimated Productive Hours	1,888
Hours Used – Reasonable Estimate	1,900 – Per CA-IR-112, page 10, 30 th line
Estimated Wage Rate	\$13.00 per hour**
Estimated Wage Amount	\$24,700.00 – Per CA-IR-112, page 10, 30 th line

** Receptionist/Clerk position for the period 11/1/03 – 10/31/04 ranges from \$11.94 - \$14.48 per bargaining unit contract.

3. Warehouse/Toolroom Attendant position, EE #34136, page 88, lines 46 – 51 through page 89, lines 1 - 5 of HELCO's response to CA-IR-111

The total for this employee based on the 2004 payroll information is -

	<u>Amount</u>	<u>Prod Hours</u>
--	---------------	-------------------

Regular Earnings	\$20,108.62	822.0
Penalty @.5X	\$ 24.71	0.0
C/O Meal Penalty @ 1.5X	\$ 311.37	0.0
C/O Meal Penalty @ 2.0X	\$ 195.58	0.0
Meals	\$ 300.00	0.0
C/O OT @ 1.5X	\$ 148.26	4.0
C/O OT @ 2.0X	\$ 321.23	6.5
Pre/Post Roster OT @ 1.5X	\$ 1,470.42	40.2
Pre/Post Roster OT @ 2.0X	\$ 207.06	4.3
Scheduled OT @ 1.5X	\$ 6,780.90	185.0
Scheduled OT @ 2.0X	<u>\$ 2,331.20</u>	<u>47.8</u>
Total	<u>\$32,199.35</u>	<u>1,109.8</u>

The above information was provided by HELCO's Accounting Department in conjunction with forwarding the standard labor rate worksheet to the Engineering Department for review and modification. Since the above payroll information represented only a partial year of wages and hours for the Warehouse/Toolroom Attendant position, HELCO's Distribution Department proceeded to adjust that partial year information to reflect a full year of wages and hours as follows -

Available Hours	2,080
Less: Vacation and Holiday Hours	(192)
Add: Allowance For OT	348
Estimated Productive Hours	2,236
Hours Used – Reasonable Estimate	2,236 – Per CA-IR-112, page 16, 1 st line

Estimated Wage Rate \$29.01 per hour**

Estimated Wage Amount \$64,866.36 – Per CA-IR-112, page 16, 1st line

** Warehouse/Toolroom Attendant position partial year average rate was as follows:

2004 Partial Year Wages \$32,199.35

2004 Partial Year Productive Hours 1,109.8

2004 Partial Year Average Pay Rate \$ 29.01 per hour

- d. For employees who were projected to be full time in 2006 but the positions were not filled in any part of 2004, in order to adjust the 2004 actual results (which reflected no wages or hours) to reflect a full year of wages and hours in 2006, each department added the position to the worksheet that was provided by the Accounting Department. Wages for these new positions were generally estimated using information for similar positions or an estimate of what the position would pay in 2004. Hours for these new positions were generally estimated using information for similar positions or an estimate of hours the position was anticipated to work.

Three examples of how this was accomplished is as follows:

1. Staff Engineer position

HELCO's Distribution Department proceeded to estimate a full year of wages and hours as follows -

Available Hours 2,080

Less: Vacation and Holiday Hours (192)

Add: Allowance For OT 96

Estimated Productive Hours 1,982

Hours Used – Reasonable Estimate 1,982 – Per CA-IR-112, page 7, 22nd line

Estimated Wage Rate \$30.00 per hour**

Estimated Wage Amount \$59,5200.00 – Per CA-IR-112, page 7, 22nd line

** Anticipated to pay \$30 per hour based on position's market rate and comparable to System Forester per CA-IR-112, page 7, 21st line.

2. Planner Aid position

HELCO's Engineering Department proceeded to estimate a full year of wages and hours as follows -

Available Hours	2,080
Less: Vacation and Holiday Hours	(232)
Estimated Productive Hours	1,848
Hours Used – Reasonable Estimate	1,851** – Per CA-IR-112, page 14, 31 st line
Estimated Wage Amount	\$37,628.71** – Per CA-IR-112, page 14, 31 st line

** Since there were other Planner Aid positions in the 2004 payroll information, the Engineering Department used the wages and hours of a similar Planner Aid position. Information used per CA-IR-111, page 76, sum of lines 8 and 9.

3. Commercial Account Manager

HELCO's Energy Services Department proceeded to estimate a full year of wages and hours as follows -

Available Hours	2,080
Less: Vacation and Holiday Hours	(192)
Allowance For OT	120
Estimated Productive Hours	2,008
Hours Used – Reasonable Estimate	2,008** – Per CA-IR-112, page 7, 46 th line
Estimated Wage Amount	\$60,000.00** – Per CA-IR-112, page 7, 46 th line

** Since there were other Commercial Account Manager positions in the 2004 payroll information, the

Energy Services Department used the wages and hours of a similar Planner Aid position. Information used per CA-IR-111, page 79, sum of lines 28 and 29 as follows:

	<u>Amount</u>	<u>Prod Hours</u>
Line 28	\$57,498.36	1,824.0
Line 29	\$ 0.00	4.0
Total	\$57,498.36	1,828.0
Round Up	\$60,000.00	2,008.0 (Includes Allowance For OT)

CA-IR-424

Ref: HELCO-WP-1401 & Response to CA-IR-182 (Plant Additions).

In response to CA-IR-182, HELCO provided PIAs for 18 of the 21 projects set forth on HELCO-WP-1401 in excess of \$500,000. Pages 18-22 of Attachment 1 represent the PIA for Project H0000655, Keahole Power Plant Rezoning. The "justification" section (Attachment 1, page 21) states: "Applying for reclassification of the Keahole land was a condition of the BLNR D&O on 3/25/02 for HELCO's request for extension. Reclassification and rezoning will facilitate further expansion of Keahole (i.e., ST-7), as well as with operating the existing and near future facilities (i.e., CT2, EMDs, and CT-4/5)". This PIA was approved in May 2002 subsequent to the issuance of the referenced BLNR D&O in March 2002. Please provide the following:

- a. Subsequent to May 2002, have any changes or occurrences arisen that would cause the original justification for this project to no longer be accurate? Please explain.
- b. Would the reclassification and rezoning activities have been required in the absence of HELCO's plans to expand the site to include:
 1. CT-4? Please explain.
 2. CT-5? Please explain.
 3. ST-7? Please explain.

HELCO Response:

- a. Please see response to CA-IR-244 subparts a., a.1, and a.2.
- b.
 1. No. However, while reclassification and rezoning would not have been required in the absence of HELCO's plans to expand the site to include CT-4, CT-5 and ST-7, even the non-expanded facility may have eventually benefited from reclassification and rezoning because the Conservation District classification limited HELCO's ability to make improvements at the Keahole Station including changes to existing facilities and improvements to reflect technological advances or future regulatory requirements. Also see response to CA-IR-244 subparts a, a.1, and a.2.
 2. See response to subpart b.1 above.
 3. See response to subpart b.1 above.

CA-IR-425

Ref: HELCO-1401, HELCO-1407, HELCO-WP-1401, HELCO-WP-1407 (p. 6) & HELCO-WP-1409 (Plant Additions).

HELCO-1401 and HELCO-1407 indicate that the \$45.318 million of plant additions for the 2006 test year is net of "in-kind" contributions. However, it is unclear from a review of HELCO-1407, HELCO-WP-1401 or HELCO-WP-1407 whether and to what extent the contributions set forth on HELCO-WP-1409 (A through D) were actually deducted from the forecast of gross plant additions to derive the \$45.318 million of plant additions. Please provide the following:

- a. Does additional documentation exist that provides a breakdown of the 2006 forecast between gross construction expenditures and contributions to arrive at the \$45.318 million plant addition?
 1. If so, please provide such information in a spreadsheet file format (by project, if available).
 2. If not, please explain how the Company determined that the \$45.318 million was net of contributions?
- b. Does additional documentation exist that shows how the CIAC amounts set forth on HELCO-WP-1409(A), (B) and (C) were determined?
 1. If so, please provide a copy of said documentation.
 2. If not, please explain.
- c. The specific and blanket project CIAC amounts set forth on HELCO-WP-1409(A) and (B) tie to the amounts set forth on (C). However, it is not clear how the 2006 CIAC forecast of \$190,791 determined on HELCO-WP-1409(D) ties or supports the amounts on (A), (B) or (C). Please explain and demonstrate how \$190,791 on (D) is included on (A), (B) or (C).
- d. Referring to HELCO-WP-1409(D), please provide the following with regard to the \$11,593 of CIAC for Project H0000725:
 1. How was this amount determined? Please explain.
 2. Does this amount reflect "In Kind" or "In Cash" CIAC? Please explain.
 3. Please reconcile this amount with the CIAC amounts set forth in response to CA-IR-185, Attachment 1, page 27.

HELCO Response:

- a.1. The \$45.318 million forecast of plant additions in 2006 per HELCO-WP-1401 is inclusive of "in-kind" contributions, Advances and Contributions in Aid of Construction (CIAC). HELCO-WP-1409(A) through HELCO-WP-1409(F) provided a list of projects and estimated contributions known at the time the workpaper was developed. There is no list that shows the project costs net of the contributions.

a.2.The Company's position has been that the \$45.318 million is inclusive of and not net of contributions. See HELCO T-14, page 2, starting from line 16.

b.1.Yes, for specific customer projects, the planner or engineer determines a cost estimate to construct an overhead distribution line to service the project. If a project is to be served via an underground infrastructure, an equivalent overhead design is made and estimated as the overhead equivalent. This overhead equivalent estimate becomes the advance the customer will contribute to HELCO. For the underground project, a second estimate is done. Usually, the cost of the underground project is more costly than the overhead equivalent so the difference becomes the contributions in aid of construction (CIAC). The cost estimates are done by spreadsheets and then inputted into PILLAR in order to generate the overhead costs and the contributions are listed on the Project Initiation Authorization (PIA). PIAs have been provided for test year projects estimated in excess of \$500,000 as part of CA-IR-182. Attachment 1 to this response is a sample of the documentation generated to develop the contributions. Documentation for all the projects with CIAC amounts is voluminous and is available for inspection at HECO's Regulatory Affairs Division office, Suite 1301, Central Pacific Plaza, 2202 South King Street, Honolulu, Hawaii. Please contact Dean Matsuura at 543-4622 to make arrangements to inspect the requested information. As exhibited by Attachment 2 of this response, historical percentages were applied to the blanket budgets in order to calculate the estimated amount of aids and advances that are collected. Based on November's PILLAR data as of November 9, 2006 and the Accounting Departments collections through October 31, 2006, HELCO has updated the test year 2006 CIAC and advance estimates. See CA-IR-447, T-14 HELCO-WP-1409(A), (B) and (C). For blanket projects (H1008000, H1003000 and H1017000), the update includes the 2006 CIAC and

Advance collected from January through October 2006 added to a forecast for the remaining months of November and December 2006. The remaining months of November and December 2006 CIAC and Advance forecast was based on the percentages of CIAC and Advance collected from January through October 2006 multiplied by the forecast of expenditures of this blanket in November and December. See Attachment 3 of CA-IR-425 which shows the CIAC and Advance collected in 2006, the determination of the percentages for CIAC and for Advance, and calculation of the forecast for November and December 2006 by multiplying the forecast of expenditures for November and December by the percentages. Using the percentages from the first 10 months of 2006 should provide a better forecast for the remaining months of 2006 as it reflects the current year statistics. The CIAC and Advances for specific projects are represented by actual amounts collected during 2006.

- c. HELCO-WP-1409(D) is a list of the known specific projects having in-kind contributions at the time the testimony was developed. The in-kind contributions are not reflected in HELCO-WP-1409(A), (B), (C) as those workpapers were listings of only CIAC and advance, not in-kind contributions.
- d.1. HELCO-WP-1409(D) is a list of in-kind contributions. The \$11,593 was the planner's estimate of the value of the underground infrastructure at the time the testimony was prepared. As reflected in the response to CA-IR-426 Attachment 1, CA-IR-447, T-14 HELCO-WP-1409(D) and Attachment 4 of this response, the in-kind contribution amount should have been \$24,956.
- d.2. Refer to d.1.
- d.3. The response to CA-IR-182, Attachment 1, page 27 shows an in-kind contribution of \$25,000. This is a rounding off of the \$24,956 discussed in d.1 above.

H0001436

ADDITIONAL
REQUEST NO. 2

2006 CAPITAL BUDGET
ADDITIONAL REQUEST

PROJECT NAME: Halelli S/D

Grand Parent: OM-350 Overhead Svcs and Extns

LOCATION: Halelli, South Kona

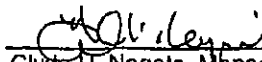
Approval is requested for the attached authorization request in the amount of \$44,000 for the installation of a 1-phase, 7.2 KV primary overhead distribution system for Halelli Subdivision located at Halelli, South Kona.

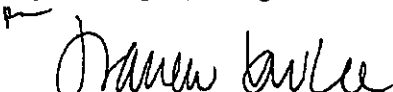
\$44,000 is being transferred from the following Project(s):

<u>Budgeted Project Number To Transfer From</u>	<u>Budgeted Project Name To Transfer From</u>	<u>Original Approved Budgeted Amount</u>	<u>Balance Before Transfer</u>	<u>To RYamat06</u>	<u>Balance After Transfer</u>
H0007000	Customer Request Projects	1,337,973	1,337,973	44,000	1,293,973

Total Project 44,000

Approval is requested.


Clyde H. Nagata, Manager


Warren H.W. Lee, President

Pillar Proj. #: RYamat06
Request #: H0022257
Poles & Conductors

PROJECT IDENTIFICATION FORM - AUTHORIZE PROJECT

The Project identified below has not been established in MIMS

PUC Approved: ☐ Approval Required ☒ Not Required

☐ Approved, Date of Decision & Order: - - Docket Number:

☐ Awaiting PUC Approval, Application Filed - -

Authorization for: ☐ Engineering ☐ Materials ☐ Construction

Approval Option: Authorize expenditures that are unbudgeted

Submitted by: Ricky Yamato Phone/Ext #: 511

Originator's Name: Ricky Yamato

Responsible Estimator: Ricky Yamato
(Pillar UserID)

Resp. Estimator Dept: Engineering
(Pillar Department Folder)

Project Manager: Ricky Yamato

Date: 01/13/2006

Required Approvals to Initialize a Project:

Bob Campbell 1/20/06
Responsible Manager Date
Darren Bule 28 JAN 2006
HELCO President Date

Required Approvals to Authorize a Project:

Bob Campbell 1/20/06
Responsible Manager Date

VP, Government and Community Affairs Date
(not required if PUC approval is obtained)
Bob Campbell 1/20/06
HELCO Accounting Manager Date
Darren Bule 28 JAN 2006
HELCO President Date

PROJECT IDENTIFICATION FORM - AUTHORIZE PROJECT

The Project Identified below has not been established in MIMS

Project Title: Haleili S/D Plant Addition Date: 2006-01
Project Number: RYAMAT06 Commitment Date: 2006-04
(Temporary) Primary Corporate Goal: Cap Exp
Strategic Plan Linkage: 2A - Retain Customers Impact on Goal: High
(Primary)

Project Forecast (Thousand \$)							
(Attach the "PR9105-P: For PIF" report obtained from the estimators' Pillar file.)							
<u>Prior</u> <u>Years</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>Future</u> <u>Years</u>	<u>Total</u>
\$0	\$44	\$0	\$0	\$0	\$0	\$0	\$44

Assessment Factors					
<u>Compliance</u>	<u>Competitive</u> <u>Advantage</u>	<u>Financial</u> <u>Impact</u>	<u>Reliability</u>	<u>Corporate</u> <u>Image</u>	<u>Total</u> <u>Score</u>
42	0	0	0	0	42

Purpose/Objectives:

The purpose of this project is to provide a 1-ph, 7.2kv primary oh distribution system for Haleili S/D. Project is to be completed under SR H0022257.

Scope Description:

Install one (1) 70 ft pole, three (3) 45 ft poles, three (3) 40 ft poles, five (5) anchors, #1/0 aac primary and #3/0 aa neutral.

PROJECT IDENTIFICATION FORM - AUTHORIZE PROJECT

The Project Identified below has not been established in MIMS

Resource Needs:

HWK, HDK, HWX & HWS

Justification:

To provide a 1-ph, 7.2 kv primary oh distribution system for Haleli S/D located at Haleli, S. Kona

PROJECT IDENTIFICATION FORM - AUTHORIZE PROJECT

The Project Identified below has not been established in MIMS

Relation to overall management operational objectives and consistency with IRP:

Issues, Impacts, Considerations:

Developer made payment of \$43,569 for the installation of a 1-ph, 7.2kv primary oh distribution system.

PROJECT IDENTIFICATION FORM - AUTHORIZE PROJECT

The Project identified below has not been established in MIMS

Contributions:

Contributions in aid of construction (CIAC):

- In Kind	\$1,159.00	Non refundable contribution
GET Included		
- In Cash	NONE	

Cash Advance	\$42,410.00	Refundable advance
GET Included		

Cost Sharing
(under HECO Policy UG Lines, October
2000)

NONE

Other type of payment (cash, non-cash) by outside party

NONE

Hawaii Electric Light Company, Inc. • 74-5519 Kaiwi Street • Kailua-Kona, HI 96740-1684

CUST 3-3-1
H-W/G



Haleili LLC
P.O. Box 481
Kealahou, HI 96780

October 6, 2005

5 10 28 AM

CALL

Gentlemen:

Subject: Haleili Subdivision

In our proposal letter dated August 25, 2005, we quoted you a cost of \$48,076.00 for the installation of 1-phase, 7.2 KV overhead distribution system for the subject project located at Haleili, South Kona. This cost is no longer valid.

The revised cost and specific requirements are noted as follows:

1. The total charges of the overhead electrical distribution system is as follows:

TOTAL DEVELOPER COST	\$43,569.00
TOTAL PROJECT COST	\$46,153.00
Developer Cost (refundable advance) (Includes State GET)	\$30,631.00
Hawaii Telcom Joint Pole Shares (refundable advance)	\$11,779.00
Total Developer Advance (Includes State GET)	\$42,410.00
Developer Cost - Street Lighting Joint Pole Shares (non-refundable contribution - (Includes State GET)	\$ 1,159.00

Based on the cost noted above, you are required to pay HELCO a refundable customer advance of \$42,410.00, and a non-refundable contribution of \$1,159.00, which include State General Excise Tax.

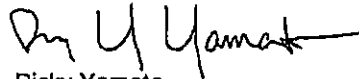
Based on your payment of \$4,808.00 on September 22, 2005, we request that the \$38,761.00 payment balance be made so we may process our construction work order. Please be informed that it may take four to six weeks to schedule our construction work. Work will require ten (10) to fourteen (14) days to complete once construction has started.

Please signify your acceptance of this proposal by appropriate execution in the space provided below. We are including one extra copy of this proposal and request that the signed original, Customer Data Input Sheet and payment of \$38,761.00 be mailed to HELCO in the enclosed self-addressed envelope or delivered directly to HELCO's Customer Service Division located at 74-5519 Kaiwi Street, Kailua-Kona, Hawaii.

Haleili LLC
October 6, 2005
Page 2

Should you have any questions, please write or call me at 327-0511 between the hours of 7:00 a.m. - 3:30 p.m.

Sincerely,



Ricky Yamato
Customer Planner
Customer Engineering Division

RY:abl
Enclosures
Request No. H22257

Approved by Developer:  _____
Signature in Ink

Name of Signer: Theresa Haslett _____
Type or Print

Title: Partner _____ Date: 10/21/05 _____

Name of Company: Haleili, LLC _____

Approximate date your contractor will be ready
for HELCO to begin its construction: 10/21/05 _____

Refunds made to: Haleili, LLC _____
Type or Print

Mailing Address: PO Box 481 _____
P.O. Box/Street Address

Kealahou HI 96750
City State Zip Code



DEVELOPER SUMMARY - Overhead Cost Estimate						
Project:	Halell S/D				Date:	10/5/05
Planner:	R.Yamato				Request Number:	H22257
CAPITAL:	Direct Engineering (includes WSAWX & transportation)			\$	2,065.82	
	Direct Labor Cost (NI-cludes transportation)			\$	5,847.97	
	Direct Material Cost			\$	7,525.15	
	Direct Outside Materials			\$	-	
	Direct Outside Services			\$	15,219.00	
	Total Capital			\$	30,657.94	\$ 30,657.94
O & M:	Direct Labor (NE-cludes transportation)			\$	-	
REMOVAL:	Direct Labor (NR/NS-cludes transportation)					
	Total O & M / Removal			\$	-	\$ -
OVERHEAD:	Total Overhead			\$	15,495.20	\$ 15,495.20
	Sub Total					\$ 48,153.14
	Plus HELCO JP Shares (Verizon installed)			\$	-	
	Plus Verizon Transfer Cost			\$	-	
	Total Project Cost			\$	46,153.14	
	Less Developer Cost			\$	41,826.58	
	Less HELCO Betterment			\$	4,326.56	
	Less Salvageable Material Credit			\$	-	
	Developer Cost Sub Total			\$	41,826.58	
	Advance			\$	40,714	
	State GET (4.166%)			\$	1,698	
	Developer Advance (w/ GET)			\$	30,631	
	Verizon-JP-Advance			\$	11,779	
	Total Advance (w/ GET)			\$	42,410	
	CH St. LL JP-Aid			\$	1,113	
	State GET (4.166%)			\$	48	
	Sub Total Aid			\$	1,159	
	Total Developer Advance (includes GET & Verizon JP shares)			\$	42,410	
	Total Developer Aid (includes State GET)			\$	1,169	
	Total Developer Cost					\$43,569
	Refundable Verizon JP Shares (2-way-HELCO installed)			\$	10,666.20	
	Refundable Verizon JP Shares (3-way-HELCO installed)			\$	1,112.86	
	Non-refundable CH Shares- St. LL (2-way-HELCO installed)			\$	-	
	Non-refundable CH Shares- St. LL (3-way-HELCO installed)			\$	1,112.86	
	Man-hour	Crew-hour		10 % Payment		4,357
Capital	166.2			90 % Payment		39,212
O & M	0.0					
Removal	0.0					
TOTAL	166.2	0.0				
Prepared By:	R.Yamato			Checked by:	KRW 10-5-05	

OVERHEAD COST ESTIMATE (SMU and Labor Costing)						
Project: Haleili S/D			Date: 10/5/05			
Planner: R.Yamato			Request / Parent WO Number: H22257			
Qty.	SMU. No.	Description		Labor M/H Unit	Labor M/H Total	
121	1-2040	(7951) #1/0 strd AAC - 1W (lb.)	(Refer to "SMU Material Estimate Summary Report" for Material Unit Costs)	0.08	9.68	
	1-2040	(7951) #1/0 strd AAC - 2&3W (lb.)		0.08	0.00	
	1-2040	(7980) 2-#1/0 PEIAC		0.017	0.000	
	1-2040	(7981) 2-#1/0 PEIAC & 1-#3/0 AAAC		0.017	0.000	
	1-2040	(7978) #4/3 al tpx (ft)		0.017	0.000	
	1-2040	(7985) #1/0 al tpx (ft)		0.017	0.000	
	1-2040	(7986) #4/0 al tpx (ft)		0.017	0.000	
	1-2040	(7988) #1/0 Quad (ft)		0.017	0.000	
	1-2040	(7989) #4/0 Quad (ft)		0.017	0.000	
	1-2040	() #336.4 strd al wp		0.03	0.00	
221	1-2040	(8298) #3/0 strd AAAC - lw	"	0.05	11.05	
	1-2040	(8298) #3/0 strd AAAC - 2&3W	"	0.04	0.00	
	1-2040	(8300) #336.4 MCM strd AAC - 1W	"	0.04	0.00	
	1-2040	(8300) #336.4 MCM strd AAC - 2&3W	"	0.03	0.00	
	1-2040	(8306) #556.5 MCM strd AAC - 1W	"	0.03	0.00	
	1-2040	(8306) #556.5 MCM strd AAC - 2&3W	"	0.02	0.00	
	1-5000	(11) 30FT POLE CL 5 (5.0')	"	4.0	0.0	
	1-5000	(19) 35FT POLE CL 5 (5.0')	"	4.0	0.0	
3	1-5000	(27) 40FT POLE CL 3 (5.5')	"	4.0	12.0	
3	1-5000	(39) 45FT POLE CL 3 (6.0')	"	4.0	12.0	
	1-5000	(51) 50FT POLE CL 3 (6.5')	"	4.0	0.0	
	1-5000	(64) 55FT POLE CL 3 (7.0')	"	4.0	0.0	
	1-5000	(74) 60FT POLE CL 1 (7.0')	"	4.0	0.0	
1	1-5000	70FT POLE		8.0	8.0	
	2-4030-A	midspan (1 phase)	"	1.0	0.0	
1	2-4030-C	midspan (1 phase)	"	1.0	1.0	
5	3-4100	3/8" DGS 34'	"	1.0	5.0	
2	3-4100	3/8" DGS 41'	"	1.0	2.0	
	3-4100	3/8" DGS 47'	"	1.0	0.0	
	3-4100	3/8" SWGS 34'	"	2.0	0.0	
3	3-4100	3/8" SWGS 41'	"	2.0	6.0	
	3-4100	3/8" HGS ()	"	1.5	0.0	
	3-4100	1/2" DGS 34'	"	1.0	0.0	
	3-4100	1/2" DGS 41'	"	1.0	0.0	
	3-4100	1/2" DGS 47'	"	1.0	0.0	
	3-4100	1/2" SWGS 34'	"	2.0	0.0	
	3-4100	1/2" SWGS 41'	"	2.0	0.0	
	3-4120-C2	3/4" galv anchor area C (8')	"	0.0	0.0	
5	3-4120-C3	1" galv anchor area C (8')	"	0.0	0.0	
	3-4120-C4	1-1/4" galv anchor area c (10')	"	0.0	0.0	
2	5-1009-F1	Straight & Angle	"	1.0	2.0	
	5-1009-F2	Sec. spilt	"	1.0	0.0	
2	5-1009-F3	Single DE	"	1.0	2.0	
2	5-1009-F4	Line Guard	"	1.0	2.0	
1	5-1009-F5	DDE	"	1.5	1.5	
	5-1009-F6	Buck	"	1.0	0.0	

	7-2050-F1		"	1.0	0.0
	7-2050-F2		"	1.5	0.0
3	7-2050-F2A	w/o CO	"	1.0	3.0
	7-2050-F3		"	2.0	0.0
	7-2050-F3A	Transl & Buck	"	2.0	0.0
	7-2050-F4	Angle w/o CO	"	1.0	0.0
1	7-2050-F5		"	1.5	1.5
	7-2050-F5A	w/o CO	"	1.0	0.0
	7-2050-F6		"	2.0	0.0
	7-2050-F7		"	2.0	0.0
	7-2050-F7A	Sgl DE	"	1.5	0.0
	7-2050-F7B	S.D.E Jumper	"	2.0	0.0
1	7-2050-F8		"	2.0	2.0
	7-2050-F8A	w/o CO	"	2.0	0.0
	7-2050-F8B	Reduce Tension w/CO	"	1.5	0.0
	7-2050-F8B1	Reduce Tension w/o CO	"	1.0	0.0
	7-2050-F9		"	2.0	0.0
1	7-2050-F10	w/LA	"	2.0	2.0
	7-2050-F10A	w/o CO	"	1.5	0.0
	7-2210-1-A	2W	"	3.0	0.0
	7-2210-1-C	2W	"	3.0	0.0
	7-2210-A	2W	"	2.5	0.0
1	7-2210-C	2W	"	2.5	2.5
	7-2210A-A	2W 4pin dbl. x-arm	"	2.5	0.0
	7-2210A-C	2W 4pin dbl. x-arm	"	2.5	0.0
	7-2210-A	3W	"	3.0	0.0
	7-2210-C	3W	"	3.0	0.0
	7-2210A-A	3W 6pin DA	"	3.5	0.0
	7-2210A-C	3W 6pin DA	"	3.5	0.0
1	8-1170			8.0	8.0
	12-1020-F1	Neutral grounding	"	1.0	0.0
7	12-1020-F2	Primary grounding	"	1.0	7.0
	12-5201	Object Marker	"	0.1	0.0
			"		0.0
			"		0.0
2		Traffic Control	"	8.0	16.0
		Tailgate meeting	"		0.0
				\$ 7,525.15	
CAPITAL:		Total Direct Material Cost		\$ 7,525.15	
				Man-hour Sub Total	114.2
		Non-productive hours per 8 hour shift @ 4 men crew	2.5		51.9
		Total Direct Capital Man-hours			166.2
O & M:				(Capital Man-hours)	0.0
				(O & M m/h = 30% of capital labor m/h)	0.0
		Non-productive hours per 8 hour shift @ 4 men crew	2.5		0.0
		Total Direct O&M Man-hours			0.0
REMOVAL:				(Capital Man-hours)	0.0
				(Removal m/h = 50% of capital labor m/h)	0.0
		Non-productive hours per 8 hour shift @ 4 men crew	2.5		0.0
		Total Direct Removal Man-hours			0.0
OUTSIDE MATERIALS (PME, VS, fault indicator and other special order non-stock material)					

Qty	Description		Unit	Unit Total		
			\$ -	\$ -		
			\$ -	\$ -		
			Total Outside Materials		\$	-
PRE-CAPITALIZED MATERIALS (padmt. transformer)						
Qty	Description		Unit	Unit Total		
			\$ -	\$ -		
			\$ -	\$ -		
			Total Pre-Capitalized Materials		\$	-
SALVAGEABLE MATERIALS						
Qty	Description		Unit	Unit Total		
			\$ -	\$ -		
			\$ -	\$ -		
			Total Salvageable Materials		\$	-

OVERHEAD COST ESTIMATE (Outside Material and Services and Joint Pole Costing)							
Project:		Halelli S/D		Date:		10/5/05	
Planner:		R.Yamato		Request/Parent WO Number:		H22257	
OUTSIDE SERVICES							
Qty	Depth ea.	Zone	Description	Unit	Unit Total		
1	9	8	Dig Pole Hole (+1' for pole base)	\$ 150.00	\$ 1,350.00		
3	5.5	8	Dig Pole Hole (+1' for pole base)	\$ 150.00	\$ 2,475.00		
3	6	8	Dig Pole Hole (+1' for pole base)	\$ 150.00	\$ 2,700.00		
5	8	8	Dig and Set Anchor	\$ 150.00	\$ 6,000.00		
	----	8	Sidewalk Repair < 4 blocks	\$ 280.00	\$ -		
	----	8	Sidewalk Repair 4 or > blocks	\$ 260.00	\$ -		
	----	8	AC Repair	\$ 150.00	\$ -		
7	----	8	Ground Rod Installation (2 per)	\$ 350.00	\$ 2,450.00		
	----	8	Pole Base	\$ 125.00	\$ -		
16	----	8	Traffic Control	\$ 15.25	\$ 244.00		
	----	8	Tree Trimming	\$ -	\$ -		
	----	8	Helicopter	\$ 1,750.00	\$ -		
	----	8		\$ -	\$ -		
				Total	\$ 15,219.00		\$ 15,219.00
2-way Verizon JP SHARES (HELCO installed):							
Qty		TMK	Description	Unit	Unit Total		
	25/25	8	30' Pole	\$ -	\$ -		
	30/30	8	35' Pole	\$ -	\$ -		
3	30/35	8	40' Pole	\$ 954.82	\$ 2,864.46		
3	30/35	8	45' Pole	\$ 1,325.58	\$ 3,976.74		
5	50/50	8	Anchor Installation	\$ 765.00	\$ 3,825.00		
	50/50	8	Termi-Mesh	\$ -	\$ -		
	50/50	8	Pole Base	\$ -	\$ -		
	50/50	8	Traffic Control	\$ -	\$ -		
	50/50	8	Sidewalk Repair (Concrete)	\$ -	\$ -		
	50/50	8	AC Repair	\$ -	\$ -		
	50/50	8	Tree Trimming	\$ -	\$ -		
	50/50	8	Pole Removal	\$ -	\$ -		
				Total	\$ 10,666.20		\$ 10,666.20
3-way JP Shares (HELCO installed)							
QTY		TMK	Description	Unit	Verizon Unit Total	Unit	CH Unit Total
0	30/30/30	8	35' Pole	\$ -	\$ -	\$ -	\$ -
	30/35/30	8	40' Pole	\$ -	\$ -	\$ -	\$ -
1	35/65/35	8	70' Pole	\$ 1,112.86	\$ 1,112.86	\$ 1,112.86	\$ 1,112.86
		8	Anchor Installation	\$ -	\$ -	\$ -	\$ -
		8	Termi-Mesh	\$ 500.00	\$ -	\$ 500.00	\$ -
		8	Pole Base	\$ -	\$ -	\$ -	\$ -
		8	Traffic Control	\$ -	\$ -	\$ -	\$ -
		8	Sidewalk Repair (Concrete)	\$ -	\$ -	\$ -	\$ -
		8	AC Repair	\$ -	\$ -	\$ -	\$ -
		8	Tree Trimming	\$ -	\$ -	\$ -	\$ -
		8	Pole Removal	\$ -	\$ -	\$ -	\$ -
				Total	\$ 1,112.86		\$ 1,112.86
Transfer Charge:		per JP #	25591				\$ -

IND #	EE #	LABOR CLASS	Description	m/h	OH Primary Line Extension
	Engr m/h (C&M m/h x 45%)			74.8	
NI	150	W_CD-CE	42		0.0
NI	150	W_SCP-CE	15's		0.0
NI	150	W_CP-CE	12's	67%	50.1
NI	150	W_JCP-CE	10's		0.0
NI	150	W_PA-CE	9's	10%	7.5
			WC m/h total	27%	57.6
NI	150	TCS-CE	Supervisor	2%	1.5
NI	150	W_TT-CE	Transit Tech (JM)	5%	3.7
NI	150	W_RH-CE	Rodman Helper (AT)	5%	3.7
NI	150	J-CE	Land Surveyor	5%	3.7
			WS m/h total	17%	12.7
NI	150	W_ENG-CE	(MSY)	3%	2.2
NI	150	W_SCD-CE	(EF)	5%	3.7
			WX m/h total	8%	6.0
			Engineering M H Total	102%	78.3
			Engineering Vehicle Total		12.0
	Capital m/h			166.2	
NI	150	TCS-CE	labor (sup)	1%	1.7
NI	150	D_Crew	labor (crew)	100%	166.2
NI	201		Direct Material Cost	----	\$ 7,525.15
NI	201		Direct Outside Material Cost	----	\$ -
NI	505		Direct Outside Services	----	\$ 15,219.00
	O&M M/H			0.0	
NS	150	TCS-ED	labor (sup)	1%	0.0
NE	150	D_CREW	labor (crew)	100%	0.0
	Removal			0.0	
NR	150	TCS-ED	labor (sup)	1%	0.0
NR	150	D_CREW	labor (crew)	100%	0.0
		Project:	Haleili S/D	Date	10/5/05

Project #	Proj Link	Sub-Project #	TRA #	Act #	Loc #	Ind #	EE #	Notes Linked To	LOC#	Line Item	Amount	0.0	0.0	0.0	0.0
RYama05	RYama05		AFUD	AFUD	AFUL	AFUL	AFUL	Not In File		Hotel S/D	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
			AFUD	AFUD	AFUL	AFUL	AFUL				\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
			AFUD	AFUD	AFUL	AFUL	AFUL				\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
			AFUD	AFUD	AFUL	AFUL	AFUL				\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
			AFUD	AFUD	AFUL	AFUL	AFUL				\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
			AFUD	AFUD	AFUL	AFUL	AFUL				\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
RYama06							401	Not In File		Stoner OHRYama06	\$1,133.06	\$1,133.06	\$0.00	\$0.00	\$0.00
							401				\$1,133.06	\$1,133.06	\$0.00	\$0.00	\$0.00
RYama06							404	Not In File		Energy Delivery CHRY...	\$5,938.43	\$5,938.43	\$0.00	\$0.00	\$0.00
							404				\$5,938.43	\$5,938.43	\$0.00	\$0.00	\$0.00
RYama06							408	Not In File		Corp Admin CH RY...	\$1,147.58	\$1,147.58	\$0.00	\$0.00	\$0.00
							408				\$1,147.58	\$1,147.58	\$0.00	\$0.00	\$0.00
RYama06							407	Not In File		Cost Initial CH RYam...	\$4,043.02	\$4,043.02	\$0.00	\$0.00	\$0.00
							407				\$4,043.02	\$4,043.02	\$0.00	\$0.00	\$0.00
RYama06							421	Not In File		NPW CH RYama06	\$1,018.60	\$1,018.60	\$0.00	\$0.00	\$0.00
							421				\$1,018.60	\$1,018.60	\$0.00	\$0.00	\$0.00
RYama06							422	Not In File		Engl Benefits CH RY...	\$1,518.93	\$1,518.93	\$0.00	\$0.00	\$0.00
							422				\$1,518.93	\$1,518.93	\$0.00	\$0.00	\$0.00
RYama06							423	Not In File		Payroll Tax CHRYam...	\$610.78	\$610.78	\$0.00	\$0.00	\$0.00
							423				\$610.78	\$610.78	\$0.00	\$0.00	\$0.00
											\$15,405.54	\$15,405.54	\$0.00	\$0.00	\$0.00
RYama06	RYama06		HMX	403	HAK	NI	150	W_PACE Prod...	W_PA	Cost Eng-Planner A...	\$148.04	\$148.04	\$0.00	\$0.00	\$0.00
RYama06	RYama06		HMX	403	HAK	NI	150	W_CA-CE Prod...	W_CP	Cost Eng-Planner-12	\$1,277.91	\$1,277.91	\$0.00	\$0.00	\$0.00
			HMX	403	NI	150					\$1,476.93	\$1,476.93	\$0.00	\$0.00	\$0.00
			HMX	403	NI	150					\$1,476.93	\$1,476.93	\$0.00	\$0.00	\$0.00
RYama06	RYama06		HWS	403	HAK	NI	150	TCS-CE Prod...	TC	Cost-Sup	\$43.98	\$43.98	\$0.00	\$0.00	\$0.00
RYama06	RYama06		HWS	403	HAK	NI	150	W_MAP-CE Pl...	W_ML	Cost-Sup	\$35.10	\$35.10	\$0.00	\$0.00	\$0.00
RYama06	RYama06		HWS	403	HAK	NI	150	W_RH-CE Prod...	W_RH	Cost-Sup	\$78.25	\$78.25	\$0.00	\$0.00	\$0.00
RYama06	RYama06		HWS	403	HAK	NI	150	W_TY-CE Prod...	W_TY	Cost-Sup	\$110.91	\$110.91	\$0.00	\$0.00	\$0.00
			HWS	403	NI	150					\$318.78	\$318.78	\$0.00	\$0.00	\$0.00
			HWS	403	NI	150					\$318.78	\$318.78	\$0.00	\$0.00	\$0.00
RYama06	RYama06		HMX	403	HAK	NI	150	W_ENG-CE Pl...	W_EN	Planning-Engneer	\$45.55	\$45.55	\$0.00	\$0.00	\$0.00
RYama06	RYama06		HMX	403	HAK	NI	150	W_SCD-CE Pl...	W_SC	Planning-Engneer	\$102.48	\$102.48	\$0.00	\$0.00	\$0.00
			HMX	403	NI	150					\$148.03	\$148.03	\$0.00	\$0.00	\$0.00
			HMX	403	NI	150					\$148.03	\$148.03	\$0.00	\$0.00	\$0.00
			HMX	403	NI	150					\$148.03	\$148.03	\$0.00	\$0.00	\$0.00
RYama06	RYama06		HOK	416	HAK	NI	150	TCS-EO Prod...	TC	Crew-Sup	\$48.81	\$48.81	\$0.00	\$0.00	\$0.00
RYama06	RYama06		HOK	416	HAK	NI	150	D_CREW Prod...	D_C	Crew	\$5,440.16	\$5,440.16	\$0.00	\$0.00	\$0.00
			HOK	416	NI	150					\$5,488.78	\$5,488.78	\$0.00	\$0.00	\$0.00
RYama06	RYama06		HOK	416	HAK	NI	201	No Excavation		Block Material	\$5,816.51	\$5,816.51	\$0.00	\$0.00	\$0.00
RYama06	RYama06		HOK	416	HAK	NI	201	No Excavation		Outside Material	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Hawaii Electric Light Company, Inc.
AIDS AND ADVANCES FOR BLANKET PROJECTS

			2006	AIDS		ADVS		
<u>COMP NO</u>	<u>COMPONENT TITLE</u>	<u>DESGR</u>	<u>BUDGET</u> ¹	<u>% OF BUDGET</u> ²	<u>AMT</u> ¹	<u>% OF BUDGET</u> ²	<u>AMT</u> ¹	<u>TOTALS</u> ¹
H0007000	Customer Request Projects	MB	624.8	3	18.7	96	599.8	618.6
H1008000	Minor OH Extn Below \$20000	MB	1,533.0	2	30.7	26	398.6	429.2
H3521000	SSPP Requests	MB	550.9	0	0.0	30	165.3	165.3
U1-0011	Unforseeable UG Cust Request	KW	1,228.7	52	638.9	48	589.8	1,228.7
H1003000	Minor UG Services	KW	1,172.7	29	340.1	26	304.9	645.0
H1017000	Minor UG Extn Below \$20000	KW	1,128.4	47	530.3	13	146.7	677.0

NOTE: 1 - Values are \$1000s
2 - Percentages are historical

SOURCE: Blanket Projects from HELCO-WP-1409(C)

Hawaii Electric Light Company, Inc.
2006 CUSTOMER CIAC AND ADVANCES WORKPAPER

CUSTOMER CIAC & ADVANCES (THRU OCT 31, 2006)

A	B	C	D	E	F	G	H	I	J	K	L	M	N
			UPDATED	ACTUALS	FORECAST	271 - CIAC				252 - ADVANCES			
			FY08 BUDGET ¹	THRU OCT ¹	(NOV-DEC)	CIAC	%	FORECAST	TOTAL	ADVANCES	%	FORECAST	TOTAL
					D - E	COLLECTED	(G + E) x 100	F x (H + 100)	G + I	COLLECTED	(K + E) x 100	F x (L + 100)	K + M
		H1003000 - Minor UG Services	\$ 1,484,133.10	\$ 1,385,945.00	\$ 98,188.10	\$ 521,510.83	38	\$ 36,946.73	\$ 558,457.36	\$ 17,365.00	1	\$ 1,230.23	\$ 18,595.23
		H1008000 - Minor OH Extn Below \$20000	\$ 3,397,032.90	\$ 3,152,890.00	\$ 244,142.90	\$ 81,779.00	3	\$ 6,332.53	\$ 88,111.53	\$ 680,508.10	22	\$ 52,894.90	\$ 733,203.00
		H1017000 - Minor UG Extn Below \$20000	\$ 1,249,439.40	\$ 992,491.00	\$ 256,948.40	\$ 172,971.00	17	\$ 44,780.88	\$ 217,751.88	\$ 456,450.00	46	\$ 118,171.45	\$ 574,621.45
Acct #	Received	Name	Req# H-	Amount	Project #								
271	Aug-06	Moss Engineering Inc: Maureen Prsby Mark Geise Lot 28 Hukulia SE	0012632	564.00	H1003000	E0001064							
271	Aug-06	Queen Construction & Masonry: George Marshall Lot 22 Hukulia SD F	0015428	3,926.00	H1003000	E0001064							
271	Feb-06	Metzler Contracting Co: Arlur Levinson Lot 24 Kukio Bay Bch Club SD	0019621	3,263.00	H1003000	E0001064							
271	Mar-06	Jeff White: Lot 1965 Kahakai Blvd Hwn Beaches SD	0020147	125.00	H1003000	E0001064							
271	Jun-06	John Edwards Constr Co Inc: LKS LLC Apt Bldg Lono Kona SD	0020317	1,065.00	H1003000	E0001064							
271	Jan-06	Moss Engineering Inc: Unit 302/304 Waiulaua @ Mauna Kea	0022130	509.00	H1003000	E0001064							
271	Jan-06	Moss Engineering Inc: Unit 401 Waiulaua @ Mauna Kea	0022132	196.00	H1003000	E0001064							
271	Oct-06	Dwight/Eileen Geiger: Kukuhae Hamakua	0022396	1,515.00	H1003000	E0001064							
271	May-06	Joseph G Souza: Kanihali Rd #60A1 Kalopa	0022650	283.00	H1003000	E0001064							
271	Jan-06	Randy J Salim: Lot81 Puako Beach Lots	0023104	504.00	H1003000	E0001064							
271	Feb-06	Clever Construction Inc: Lot 49, 49 Black Sands SD, S Kohala	0023157	2,718.00	H1003000	E0001064							
271	Jul-06	Jeff Hecht: Lot35 Ala Heiau Rd Paradise Park SD Puna	0023644	533.00	H1003000	E0001064							
271	Jul-06	Queen Construction & Masonry: Lot38F Pauoa White Sands SD S Kc	0023663	501.00	H1003000	E0001064							
271	Aug-06	John Irish: Puako SD N Kona	0023723	773.00	H1003000	E0001064							
271	May-06	Maryl Construction: Lot 2 Iotani SD Inc 4 N Kona	0023878	709.00	H1003000	E0001064							
271	Mar-06	Peterson Construction: Lot 2 Cape at Mauna Lani S Kohala	0024018	2,077.00	H1003000	E0001064							
271	Sep-06	Kohala Creative Const LLC: Lot 8 Kohala Kai Circle S Kohala	0024172	2,781.00	H1003000	E0001064							
271	Jan-06	Lloyd Francois: Lot4 Waimea Landmark Est residence	0024216	511.00	H1003000	E0001064							
271	Apr-06	Phillip E Kriehlm: Lot 24 @ Kaunohou Est N Kona	0024370	245.00	H1003000	E0001064							
271	Jun-06	Kohala-Woodvale Associates LLC: Unit 4A Kaunaoa Mauna Kea	0024576	984.00	H1003000	E0001064							
271	Jun-06	Kohala-Woodvale Associates LLC: Unit 4B Kaunaoa Mauna Kea	0024579	952.00	H1003000	E0001064							
271	Mar-06	Kohala-Woodvale Associates LLC: Unit 6A Kaunaoa @ Mauna Kea	0024582	953.00	H1003000	E0001064							
271	Mar-06	Kohala-Woodvale Associates LLC: Unit 6B Kaunaoa @ Mauna Kea	0024583	914.00	H1003000	E0001064							
271	Mar-06	Kohala-Woodvale Associates LLC: Unit 7A Kaunaoa @ Mauna Kea	0024584	893.00	H1003000	E0001064							
271	Mar-06	Kohala-Woodvale Associates LLC: Unit 7B Kaunaoa @ Mauna Kea	0024585	842.00	H1003000	E0001064							
271	Jun-06	Kohala-Woodvale Associates LLC: Unit 8A Kaunaoa Mauna Kea	0024586	984.00	H1003000	E0001064							
271	Jun-06	Kohala-Woodvale Associates LLC: Unit 8B Kaunaoa Mauna Kea	0024587	952.00	H1003000	E0001064							
271	Jun-06	Kohala-Woodvale Associates LLC: Unit 9A Kaunaoa Mauna Kea	0024588	1,027.00	H1003000	E0001064							
271	Jun-06	Kohala-Woodvale Associates LLC: Unit 9B Kaunaoa Mauna Kea	0024589	952.00	H1003000	E0001064							
271	Jul-06	Kohala-Woodvale Assoc LLC: Unit 10A Kaunaoa Mauna Kea Estates	0024590	955.00	H1003000	E0001064							
271	Jul-06	Kohala-Woodvale Assoc LLC: Unit 10B Kaunaoa Mauna Kea Estates	0024591	995.00	H1003000	E0001064							
271	Feb-06	Keauhou Kona Construction Corp: Lot 14 Huatalai PH2A P2 SD	0024715	3,394.00	H1003000	E0001064							
271	May-06	Alnaola Inc: Smith Res Lot 15B-4 Kukio Bay Beach Club SD N Kona	0024821	1,874.00	H1003000	E0001064							
271	Apr-06	Metcalf Construction: Lot Terry Metcalf @ Kaloko Mauka SD N Kona	0024864	428.00	H1003000	E0001064							
271	Sep-06	Harley M Sellers: Lot 3 Kona Vistas N Kona	0024905	113.00	H1003000	E0001064							
271	Jun-06	Moss Engineering Inc: Waiulaua Mauna Kea S Kohala	0025335	153.00	H1003000	E0001064							
271	Apr-06	Moss Engineering Inc: Duplex @ Waiulaua @ Mauna Kea S Kohala	0025345	789.00	H1003000	E0001064							
271	Apr-06	Moss Engineering Inc: Duplex @ Waiulaua @ Mauna Kea S Kohala	0025346	378.00	H1003000	E0001064							
271	Jun-06	Moss Engineering Inc: Waiulaua Mauna Kea S Kohala	0025347	493.00	H1003000	E0001064							
271	Jun-06	Moss Engineering Inc: Waiulaua Mauna Kea S Kohala	0025348	472.00	H1003000	E0001064							
271	Aug-06	Moss Engineering Inc: Duplex Waiulaua Mauna Kea S Kohala	0025349	842.00	H1003000	E0001064							
271	Jan-06	Gildewell Construction: Lot2 Mauna Lani Point	0025479	210.00	H1003000	E0001064							
271	Apr-06	ECS Inc: Villa Erickson @ Huatalai Parcel 3 SD N Kona	0025486	990.00	H1003000	E0001064							
271	Jan-06	G M Construction: LPJ Kukio LLC Kukio ph3 S/D residence	0025552	1,158.00	H1003000	E0001064							
271	Apr-06	Ivan Dewitt: Bayview Est N Kona	0025682	449.00	H1003000	E0001064							
271	Feb-06	Towns Realty Inc: Lots 14-16 Alii Hgths Unit 2 PH3, N Kona	0026100	213.00	H1003000	E0001064							
271	Feb-06	John C Stefaney: Lot 26 Makalei Estates N Kona residence	0026287	110.00	H1003000	E0001064							
271	Sep-06	Keauhou Kona Construction Corp: Lot 13 Huatalai PH2A Parcel 2 SD	0026293	3,570.00	H1003000	E0001064							
271	Feb-06	HHB & Associates LLC: Lot 43B Pua Lani Ranch, N Kona	0026601	96.00	H1003000	E0001064							
271	Feb-06	Stephen M Schwartz: Lot 33 Makalei Est, N Kona	0026652	110.00	H1003000	E0001064							
271	Sep-06	Crisalt Construction: Jeffrey & Diana Reiner Lot 54 Kealakua Bay E	0026892	431.00	H1003000	E0001064							
271	Mar-06	Alnaola Inc: Lot 20,49 Black Sand SD S Kohala	0026701	2,361.00	H1003000	E0001064							
271	Jul-06	Andrew Frogley: Anekona Estates S Kohala	0026784	369.00	H1003000	E0001064							
271	Mar-06	Reef L Taunai: 1068 Kulumalu Place S Hilo Lot 15	0026800	73.00	H1003000	E0001064							
271	Sep-06	Thomas W Pack: Lot 41 Makalei Est N Kona	0026926	369.00	H1003000	E0001064							
271	Sep-06	Arterra Custom Homes Hawaii: Lot 11 Maniniwail SD N Kona	0026927	3,485.00	H1003000	E0001064							
271	Mar-06	Troy Kelli Fernandez: 27th Ave Hwn Paradise Park SD	0027055	356.00	H1003000	E0001064							
271	Aug-06	Stanley I Nakamura: Mana SD S Kohala	0027060	371.00	H1003000	E0001064							
271	Feb-06	Leonard M Glon: Kaapehu Homestead Road residence	0027173	483.00	H1003000	E0001064							
271	Feb-06	Sean P Landers: Lot 75 Waikoloa Village	0027282	65.00	H1003000	E0001064							
271	Jan-06	Roger C Lopoulos: Lot13 Kahakai Estates	0027364	57.00	H1003000	E0001064							
271	Jan-06	Hina Sewell: Lot3 Kukuinui Subd	0027365	51.00	H1003000	E0001064							
271	Aug-06	Katsujji Matsuoaka: 28-2846 Kumata Street S Hilo	0027390	421.00	H1003000	E0001064							
271	Jul-06	Ryan Simpson: Lot15 Huatalai Hts SD N Kona	0027438	270.00	H1003000	E0001064							
271	Mar-06	Paul Lee: 28-1123 Pua Street Hononu S Hilo Lot 18	0027523	856.00	H1003000	E0001064							
271	Jul-06	Clarence E Dickenson: Lot 37 Huatalai Colony N Kona	0027536	329.00	H1003000	E0001064							
271	Mar-06	Mary V Ogile: Lot 158 Waikoloa Village S Kohala	0027551	82.00	H1003000	E0001064							
271	Jun-06	Michael Andrews: Bayview Estates N Kona	0027615	293.00	H1003000	E0001064							
271	Mar-06	Kona Scenic Land Inc: Kealakua S Kona	0027648	84.00	H1003000	E0001064							

Hawaii Electric Light Company, Inc.

2006 CUSTOMER CIAC AND ADVANCES WORKPAPER

Acct #	Received	Name	Reg# H	Amount	Project #
271	Oct-06	Edward A Gervais: Lot 18 Kahakai Est SD N Kona	0027713	369.00	H1003000 E0001064
271	Aug-06	Robert L Helstrom: Kahaluu Farmlots N Kona	0027884	596.00	H1003000 E0001064
271	Apr-06	Takamine Construction Corp: 28-348 Mao Nana Rd Pepe'ekeo	0027950	476.00	H1003000 E0001064
271	Feb-06	General Construction Pacific: Steven Benson Lot3 Aumoe, Bayview I	0028120	141.00	H1003000 E0001064
271	Apr-06	Modisher Contracting Services: Lot 61 Waikii Ranch S Kohala	0028128	129.00	H1003000 E0001064
271	Jan-06	Peterson Construction: Katherine Bell Hui 2002 S/D residence	0028133	51.00	H1003000 E0001064
271	Mar-06	James Sargent: Lot 126 Hawi N Kohala	0028147	523.00	H1003000 E0001064
271	Sep-06	James Sargent: 55-511 Hawi Rd N Kohala	0028147	584.00	H1003000 E0001064
271	Feb-06	DRH Construction: Lot 15 Bayview Est, N Kona	0028275	102.00	H1003000 E0001064
271	Mar-06	GM Construction: Knudson Luxury Hsing on lot 4 Hualalai Parcel 9 SI	0028298	2,082.00	H1003000 E0001064
271	Feb-06	Quality Builders Inc: Lot 10C Waimae Homesteads, S Kohala	0028308	591.00	H1003000 E0001064
271	Jan-06	Thomas Duarte Jr: Kailua View Est	0028325	275.00	H1003000 E0001064
271	Feb-06	Richard S Farias: Lot 8 Lahou St, Sunrise Ridge SD	0028440	155.00	H1003000 E0001064
271	Feb-06	David N Clarke: Lot A103 Kona Highlands SD	0028510	51.00	H1003000 E0001064
271	Jun-06	Tinguey Development Inc: Na Hale Kahikole #1 Hualalai Parcel 17 S	0028542	1,307.00	H1003000 E0001064
271	Apr-06	Tinguey Development Inc: Na Hale Kahikole #3 # Hualalai Parcel 17	0028547	936.00	H1003000 E0001064
271	Apr-06	GM Construction: Knudson Knudson Res @ Hualalai parcel 3 SD N K	0028558	1,382.00	H1003000 E0001064
271	Mar-06	Michael Rearden: Residence Sea Cliff 49 Black Sand SD S Kohala	0028597	1,040.00	H1003000 E0001064
271	Mar-06	Moss Engineering Inc: Mauka Cottages Lot 2 Kukio PH3 Inc2 SD	0028608	980.00	H1003000 E0001064
271	Mar-06	Moss Engineering Inc: Mauka Cottages Lot 2 Kukio PH3 Inc2 SD	0028613	980.00	H1003000 E0001064
271	Jun-06	James M Engelhardt: Lot 67 Kona Acres N Kona	0028684	355.00	H1003000 E0001064
271	Oct-06	Roger W Sweningsen: Lot 1815 Papai Street Hawaiian Shores SD Pl	0028752	555.00	H1003000 E0001064
271	Apr-06	Avalon Hawaii Const LLC: Lots 207, 209, 210 & 215 Lokahi Makai PH	0028889	341.00	H1003000 E0001064
271	Apr-06	Avalon Hawaii Const LLC: Res on lot 208 @ Lokahi Makai PH 2 N Kc	0028890	101.00	H1003000 E0001064
271	Apr-06	Avalon Hawaii Const LLC: Lot 217, 222 & 225 @ Lokahi Makai SD Pl	0028896	241.00	H1003000 E0001064
271	Jan-06	Avalon Hawaii Const LLC: Lot218 Lokahi Makai ph2	0028897	63.00	H1003000 E0001064
271	Apr-06	Avalon Hawaii Const LLC: Lots 219,220,223,224 Lokahi Makai PH2	0028898	395.00	H1003000 E0001064
271	Apr-06	Avalon Hawaii Const LLC: Lot 226, 227 & 229 @ Lokahi Makai SD Pl	0028903	330.00	H1003000 E0001064
271	Apr-06	Avalon Hawaii Const LLC: Lots 230,232,236,237 Lokahi Makai PH2	0028904	305.00	H1003000 E0001064
271	Jan-06	Eileen S Matsumoto: Kahaolono S/D	0028958	1,777.00	H1003000 E0001064
271	Mar-06	Cody B Metcalf: Lot 95 Waikoloa Village S Kohala	0028988	68.00	H1003000 E0001064
271	May-06	Ellsworth Demattos: 181040 Road 9 Hwn Acres SD Puna	0029038	444.00	H1003000 E0001064
271	Mar-06	Ivan K Kaupiko: Lot 4 Located at Kukuinui SD N Kona	0029047	75.00	H1003000 E0001064
271	Jan-06	Finesse Construction: Kohala Ranch residence	0029106	110.00	H1003000 E0001064
271	Mar-06	James J Bablen: Lot 1A Waikoloa Village S Kohala	0029108	73.00	H1003000 E0001064
271	Mar-06	Palace Construction: Kona Plantation SD N Kona	0029148	93.00	H1003000 E0001064
271	Jul-06	Oscar Passalacqua: Lot2 Makapono Partners SD N Kona	0029164	338.00	H1003000 E0001064
271	Jan-06	Ronald Pacheco: Lot76 Komomala Place komohana Gardens S/D	0029235	88.00	H1003000 E0001064
271	Apr-06	Mark Wyrlick: Lot 4 @ Malibu Ridge SD N Kohala	0029291	129.00	H1003000 E0001064
271	Mar-06	Byron C Pardo: Lotani III SD N Kona	0029307	184.00	H1003000 E0001064
271	Mar-06	Tom A Baldridge: 77-8453 One Rd N Kona	0029329	184.00	H1003000 E0001064
271	Jun-06	Avalon Hawaii Const LLC: Lots 218,221,231,240 Lokahi Makai PH2	0029334	329.00	H1003000 E0001064
271	Aug-06	Avalon Hawaii Const LLC: Lots 233,234,235 Lokahi Makai Phase2 N K	0029342	1,049.00	H1003000 E0001064
271	Jun-06	Avalon Hawaii Const LLC: Lot 239 Lokahi Makai PH2 N Kona	0029348	104.00	H1003000 E0001064
271	Jul-06	Avalon Hawaii Const LLC: Lot 241 Lokahi Makai PH2 N Kona	0029348	313.00	H1003000 E0001064
271	Jul-06	Avalon Hawaii Const LLC: Lots247&248 Lokahi Makai PH2 SD N Kor	0029355	642.00	H1003000 E0001064
271	Sep-06	Avalon Hawaii Const LLC: Lot 249 Lokahi Makai PH2 N Kona	0029357	326.00	H1003000 E0001064
271	Feb-06	Kosta Stylos: Lot 315 Laikoloa Village, S Kohala	0029393	72.00	H1003000 E0001064
271	Mar-06	Larry M Sakamoto: io View Est N Kona	0029416	260.00	H1003000 E0001064
271	Jan-06	Schuler Homes: Lot67&74 Lualai S/D	0029458	118.00	H1003000 E0001064
271	Sep-06	Dalyn R Grap: 193970 Keonelehua Ave Volcano Puna	0029461	240.00	H1003000 E0001064
271	Feb-06	Rene B Kathe: Lot 63A Keauhou Est, N Kona	0029464	84.00	H1003000 E0001064
271	Jan-06	HNB & Associates LLC: Lot21 Pualani Est	0029474	63.00	H1003000 E0001064
271	Jan-06	Regan K Matsumura: Lot7 Waikoloa Village	0029491	63.00	H1003000 E0001064
271	Jan-06	Richard S Nakahara: Lot3 Malibu Ridge Subd	0029544	48.00	H1003000 E0001064
271	Mar-06	HNB & Associates LLC: Lot 6 Pualani Estates N Kona	0029551	133.00	H1003000 E0001064
271	Mar-06	HNB & Associates LLC: Lot 7 Pualani Estates N Kona	0029552	135.00	H1003000 E0001064
271	Mar-06	Towne Realty Inc: Lots 1,2,3,4,5,6,7,8,10,19 Alii Hts Unit2 Phase 4 E	0029586	1,194.00	H1003000 E0001064
271	Jan-06	Ivan K Kaupiko: Keekee Est	0029598	117.00	H1003000 E0001064
271	Jul-06	Towne Realty Inc: Lot8 Alii Hts Unit2 PH4 N Kona	0029600	328.00	H1003000 E0001064
271	Apr-06	Towne Realty Inc: Lots 11,12 Alii Heights Unit 2 Ph 2 SD N Kona	0029604	159.00	H1003000 E0001064
271	Aug-06	Towne Realty Inc: Lots 13, 23 Alii Hts Unit 2 Ph4 N Kona	0029608	682.00	H1003000 E0001064
271	Jul-06	Towne Realty Inc: Lots14,20,21,22 Alii Hts Unit2 N Kona	0029607	1,313.00	H1003000 E0001064
271	Sep-06	Towne Realty Inc: Lot 18 Alii Hts Unit 2 Ph 4 N Kona	0029611	329.00	H1003000 E0001064
271	Feb-06	Towne Realty Inc: Lot 4,7,8 Sunset Ridge SD PH3 Unit 2 Kohala	0029633	185.00	H1003000 E0001064
271	Jun-06	Maryl Group Inc: Hale Hoomakaili Res Lot 75A Kukio Bay Beach Club	0029644	715.00	H1003000 E0001064
271	Sep-06	Burt Y Tsuchiya: 490 Kipuni Place Hilo	0029683	345.00	H1003000 E0001064
271	Jun-06	Beverly Fuller: Kailua Homesteads S Hilo	0029700	130.00	H1003000 E0001064
271	Feb-06	Carol R Ignacio: Lot B Pohakaa Mauka Rd, Paulilo	0029706	491.00	H1003000 E0001064
271	Feb-06	Donald F Rapoza: Lot 209 Lei Hanahine Pl, Aieaola	0029715	74.00	H1003000 E0001064
271	Feb-06	Maurice L Pinker: 75-5320 Kalamona RD Keolu Mauka Holualoa	0029770	672.00	H1003000 E0001064
271	Mar-06	Chris N Stadlbauer: Lot 63 Kohala by the Sea N Kohala	0029800	129.00	H1003000 E0001064
271	Mar-06	Timothy C Totten: P17-2 Painted Church Rd S Kona	0029807	551.00	H1003000 E0001064
271	Feb-06	Jason J Shurley: Lot 4 Kona Palisades, N Kona	0029817	73.00	H1003000 E0001064
271	Feb-06	Schuler Homes: Lot 63&64 Lualai PH2A, S Kohala	0029818	118.00	H1003000 E0001064
271	Jan-06	Pacific Isle Homes: Lot418 Kohala Ranch	0029826	110.00	H1003000 E0001064
271	Feb-06	Lawrence Peck: Lot 21 Lahou St, Sunrise Ridge SD	0029849	218.00	H1003000 E0001064
271	Feb-06	Michael Monje: Lot 22 Lahou St, Sunrise Ridge SD	0029850	128.00	H1003000 E0001064
271	Mar-06	Don Feduku: Hualalai Heights SD No Kona	0029859	60.00	H1003000 E0001064

CA-IR-425
 ATTACHMENT 3
 DOCKET NO. 05-0315
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Hawaii Electric Light Company, Inc.

2006 CUSTOMER CIAC AND ADVANCES WORKPAPER

Acct #	Received	Name	Req# H	Amount	Project #
271	Feb-06	Aina Kuali Partners LLC: Lot 24 Kula Ridge SD	0029930	208.00	H1003000 E0001064
271	Jun-06	Colleen A Sundberg: Kealahou Bay Est S Kona	0029937	345.00	H1003000 E0001064
271	Feb-06	Thomas P Whittemore: Lot 15 Kukuinui SD, N Kona	0029955	110.00	H1003000 E0001064
271	Mar-06	Robert G Everett: Hawkeswood's 78-765 IO PH N Kona	0029987	131.00	H1003000 E0001064
271	Feb-06	Kristi J Parker: Lot 7 Kukuinui SD	0030013	48.00	H1003000 E0001064
271	May-06	Richard C Beebe: Lot 22 Waikoloa Village S Kohala	0030014	86.00	H1003000 E0001064
271	Apr-06	Schuler Homes: Lot 29 Luialai SD PH1 S Kohala	0030084	104.00	H1003000 E0001064
271	Feb-06	Bradford T Tom: Lot 5 Kukuinui SD, N Kona	0030085	110.00	H1003000 E0001064
271	Aug-06	Mike Krochins: Susan Senti Makalei Plantations Ph II residence	0030099	651.00	H1003000 E0001064
271	Mar-06	Amy Adkison: Lot 2 Keahole Heights N Kona	0030134	82.00	H1003000 E0001064
271	Mar-06	Ron Jenny: Lot 77 Puako Beach Dr S Kohala	0030151	573.00	H1003000 E0001064
271	Feb-06	Schuler Homes: Lots 58,59,62&L8 Luialai SD PH2A, S Kohala	0030158	315.00	H1003000 E0001064
271	Feb-06	Richard Purdue: Lot 53 Waikoloa Village, S Kohala	0030177	89.00	H1003000 E0001064
271	Apr-06	Ken W Lundy: Lot 21 @ Makalei Est N Kona	0030179	129.00	H1003000 E0001064
271	Mar-06	Terry C Wigzet: Lot 245 Waikoloa Village S Kohala	0030181	89.00	H1003000 E0001064
271	May-06	John Burke: Lot 24 Waikoloa Village S Kohala	0030182	138.00	H1003000 E0001064
271	Aug-06	John W Burke: 68-3521 Malina St S Kohala	0030182	175.00	H1003000 E0001064
271	Apr-06	Magic Sands Corp: Ray Ramos & Bayview Est N Kona	0030202	80.00	H1003000 E0001064
271	Jul-06	Magic Sands Corp: Ray Ramos Bayview Est N Kona	0030202	683.00	H1003000 E0001064
271	Jul-06	Manfred Donner: Lot1910 Uwalo St Hawaiian Beaches SD Puna	0030250	360.00	H1003000 E0001064
271	Feb-06	Scott E Carter: Lot 226 Waikoloa Village S Kohala	0030271	179.00	H1003000 E0001064
271	Feb-06	Towne Realty Inc: Lots 21&29 Sunset Ridge PH3 Unit2 S Kohala	0030282	157.00	H1003000 E0001064
271	Mar-06	Jo-Ann Sarubbi: Meter Pedestal Napoohoo Rd S Kona	0030307	603.00	H1003000 E0001064
271	Apr-06	Sophia M Cabral-Malkui: 39-3313 Mho Street O'okala Hawaii	0030363	588.00	H1003000 E0001064
271	May-06	Ed E Kaneshiro: 25-4447 Pateleka Street Kaunana City	0030377	315.00	H1003000 E0001064
271	Mar-06	David S Fediuk: Hualalai Heights SD N Kona	0030414	131.00	H1003000 E0001064
271	Mar-06	Bradley P Freitas: Lot 19 Kukuinui SD N Kona	0030430	138.00	H1003000 E0001064
271	Mar-06	David Lanning: Makana Aloha Plantation SD N Kona	0030446	97.00	H1003000 E0001064
271	Sep-06	Towne Realty Inc: Lot 8 Alii Heights Unit 2 PH5 N Kona	0030466	311.00	H1003000 E0001064
271	Jun-06	Jeanne M Andrade: Hove Kau Residence	0030484	517.00	H1003000 E0001064
271	May-06	Ken Kiyosaki: 1133 Ainala Drive S Hilo	0030491	1,209.00	H1003000 E0001064
271	May-06	Bud Patton: Keaouhou Est N Kona	0030541	122.00	H1003000 E0001064
271	Sep-06	Shelley A A Ishimoto: 780 Lahou Street Hilo	0030559	126.00	H1003000 E0001064
271	Apr-06	Susan E Macy: Lot 31 Mokulua SD S Kohala	0030567	110.00	H1003000 E0001064
271	Apr-06	Russell Araujo: Kahalani Street Kahalani Estates S Hilo	0030583	81.00	H1003000 E0001064
271	Jul-06	Nathan M Hendricks: Lot 58 Kona Palisades, N Kona	0030611	76.00	H1003000 E0001064
271	Mar-06	Ryan G Quitoriano: 1055 Kulamau Place Kula Ridge SD Lot 12	0030614	82.00	H1003000 E0001064
271	Mar-06	Towne Realty Inc: Lots 24,25,40,41 Sunset Ridge Phase 2 S Kohala	0030632	332.00	H1003000 E0001064
271	Sep-06	Hauoli K Mahoe: 68-3665 Lahitani St S Kohala	0030637	371.00	H1003000 E0001064
271	Sep-06	Anthony D Vidana: Lot 43 Komohana Kai N Kona	0030645	327.00	H1003000 E0001064
271	Mar-06	Schuler Homes: Lot 30 Luialai SD Phase 1 S Kohala	0030652	86.00	H1003000 E0001064
271	Apr-06	Jane Schat: 27-360 Indian Tree Rd Papakou	0030656	620.00	H1003000 E0001064
271	Apr-06	Peter P Cantor Jr: Lot 4 @ Kohanaku N Kona	0030735	395.00	H1003000 E0001064
271	Mar-06	Starbird Construction: Maria Garcia Kona Vista SD N Kona	0030736	366.00	H1003000 E0001064
271	Mar-06	Schuler Homes: Lot 68 Luialai SD Phase 1 S Kohala	0030786	82.00	H1003000 E0001064
271	Mar-06	Detwiler Construction Co: Lot 101 @ Kona Highlands	0030886	71.00	H1003000 E0001064
271	Aug-06	Donald Evangelista: 68-1779 Hooke St Waikoloa S Kohala	0030878	369.00	H1003000 E0001064
271	Apr-06	Schuler Homes: Lot 60,61,65 Luialai SD PH2A S Kohala	0030909	256.00	H1003000 E0001064
271	Apr-06	Steve Lalin: Lot 21 @ Keahole View SD N Kona	0030911	131.00	H1003000 E0001064
271	May-06	Dave Pettersen: Lot 395 Kohala Ranch N Kohala	0030912	95.00	H1003000 E0001064
271	Apr-06	Dean A Bowman: Lot 567 @ Kohala by the Sea, N Kohala	0030913	140.00	H1003000 E0001064
271	Aug-06	Schilling Construction Inc: Craig Wells Kohala Ranch	0030924	338.00	H1003000 E0001064
271	May-06	Harmon T Verbrugge: Lot 52 Kohala Makai SD N Kohala	0030960	129.00	H1003000 E0001064
271	May-06	Dave Walsh: 48-5530 Waipio Lookout Rd Honokaa	0030971	732.00	H1003000 E0001064
271	May-06	Raymond Garrison: Walter Gossett @ Bayview Est N Kona	0030983	304.00	H1003000 E0001064
271	Apr-06	J E Merk & Assoc: 977 Kumukoa Street S Hilo	0031013	73.00	H1003000 E0001064
271	Jul-06	Edward E Lewis III: Kohala by the Sea SD N Kohala	0031025	329.00	H1003000 E0001064
271	Apr-06	Ben Vitoria: Lot 452 @ Kohala Ranch N Kohala	0031032	129.00	H1003000 E0001064
271	Apr-06	Scott A Vonnothheim: Lot 1-G-3 Hualalai Terrace SD N Kona	0031106	85.00	H1003000 E0001064
271	May-06	Kathryn M Rabang: Lot 286 Waikoloa Village S Kohala	0031107	74.00	H1003000 E0001064
271	Apr-06	Schuler Homes: Lot 79 @ Luialai SD PH 2A S Kohala	0031155	76.00	H1003000 E0001064
271	Apr-06	Lisa Kahakua: Kevin Kahakua @ Kona Plantation Est N Kona	0031164	122.00	H1003000 E0001064
271	May-06	Kevin A Felix: Metani View Estates N Kona	0031177	96.00	H1003000 E0001064
271	May-06	Eric P Bowman: Lot 470 Kohala Ranch N Kohala	0031189	71.00	H1003000 E0001064
271	Oct-06	Hale Hawaii Development: Puuone Farms Kahana Road Honokaa	0031230	928.00	H1003000 E0001064
271	May-06	Bradley F Bryson: Lot 18 Champion Ridge Mauna Lanai S Kohala	0031519	914.00	H1003000 E0001064
271	Jun-06	Craig A Chambers: Hao Kuni Pt Kona Plantations N Kona	0031520	807.00	H1003000 E0001064
271	May-06	Schuler Homes: Lot 95 Luialai SD PH 2 S Kohala	0031522	74.00	H1003000 E0001064
271	Jun-06	Quality Builders Inc: Waimea Homesteads S Kohala	0031527	672.00	H1003000 E0001064
271	May-06	S & R Construction: Lot K Moana Vista SD PH 2 N Kona	0031561	89.00	H1003000 E0001064
271	Jul-06	HHB & Assoc LLC: Lot2 Puatani Est PH1 SD N Kona	0031591	373.00	H1003000 E0001064
271	Jul-06	HHB & Assoc LLC: Lots 3,5,&6 Puatani Est SD N Kona	0031592	1,081.00	H1003000 E0001064
271	Aug-06	HHB & Associates LLC: Lots 7 Puatani Est SD N Kona	0031596	323.00	H1003000 E0001064
271	May-06	Schuler Homes: Lot 78,81,82,83 Luialai SD PH 2A S Kohala	0031622	417.00	H1003000 E0001064
271	May-06	Schuler Homes: Lot 84,91,92,93 Luialai SD PH 2 S Kohala	0031623	324.00	H1003000 E0001064
271	Jul-06	Dayton Kalai: Lot 351 26th Ave Paradise Park SD Puna	0031638	445.00	H1003000 E0001064
271	Jul-06	Roberts L Almeida Jr: Anekona Estates S Kohala	0031640	359.00	H1003000 E0001064
271	Oct-06	Tricia Ann Julian: Lot 979 25th Ave Paradise Park Puna	0031751	403.00	H1003000 E0001064
271	Aug-06	Build-4 Hawaii: Samuel & Getda Adame 485 Onukaa Street Hilo	0031774	72.00	H1003000 E0001064

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Acct #	Received	Name	Ref# H-	Amount	Project #
271	May-06	Schuler Homes: Lots 87,88,89,90 Lualai PH 2B SD S Kohala	0031848	330.00	H1003000 E0001064
271	Jul-06	Keith J Kimi: Lot8 Kailua View Est N Kona	0031855	644.00	H1003000 E0001064
271	Jul-06	Inge U Juchizer: Kaloko Mauka SD N Kona	0031863	367.00	H1003000 E0001064
271	Jul-06	William Alfonso: 17435 Hale Pule Loop Kurtistown Puna Hawaii	0031874	269.00	H1003000 E0001064
271	Jun-06	William F Yardley: Alice Shingle @ Puu Kakanihia Rdway SD S Kohi	0031903	652.00	H1003000 E0001064
271	May-06	Keith S Hayashi: 17-177 Ipauewahe Street Keauau Aq Lots SD Puna	0031908	422.00	H1003000 E0001064
271	Aug-06	Towne Realty Inc: Lots 1,2,10,11,14,15 Sunset Ridge Ph3 Unit3 Wait	0031917	2,317.00	H1003000 E0001064
271	May-06	Towne Realty Inc: Lot 3,4,5,6 Sunset Ridge PH3 Unit 3 S Kohala	0031919	306.00	H1003000 E0001064
271	Jul-06	Towne Realty Inc: Lots7&12 Sunset Ridge PH3 Unit3 SD S Kohala	0031923	790.00	H1003000 E0001064
271	Jun-06	Towne Realty Inc: Lots 6,9 Sunset Ridge PH3 Unit3 S Kohala	0031924	271.00	H1003000 E0001064
271	Aug-06	Towne Realty Inc: Sunset Ridge Ph3 Unit3 Waikoloa	0031930	326.00	H1003000 E0001064
271	Jun-06	Deborah B Geeseman: Lot 166 Hoolai St Kapohoa Vacation-land Est	0031949	607.00	H1003000 E0001064
271	May-06	Scott E Carter: Lot 49 Waikoloa Village S Kohala	0031982	74.00	H1003000 E0001064
271	Jun-06	Castle & Cooke Waikoloa LLC: Lot 7,8,9,10 Kikaha Wehikani Waikolo	0031999	363.00	H1003000 E0001064
271	Sep-06	Castle & Cooke Waikoloa LLC: Lots 1&2 Kikaha Wehikani S Kohala	0032001	700.00	H1003000 E0001064
271	Aug-06	Castle & Cooke Waikoloa LLC: Lots 3&5 Kikaha Wehikani SD S Koha	0032005	627.00	H1003000 E0001064
271	Oct-06	Castle & Cooke Waikoloa LLC: Lots 6 & 12 Kikaha Wehikani SD S Ko	0032015	867.00	H1003000 E0001064
271	May-06	Christopher T OLeary: Lot 428 Kohala Ranch N Kohala	0032034	129.00	H1003000 E0001064
271	Oct-06	North Hawaii Construction Inc: David Sonne Kohala Ranch N Kohala	0032063	1,515.00	H1003000 E0001064
271	Jun-06	Schuler Homes: Lots 80,85,86,94 Kualai SD PH2A S Kohala	0032101	430.00	H1003000 E0001064
271	Jul-06	Gale Sundseth: Lot10 Kona Hills SD N Kona	0032116	367.00	H1003000 E0001064
271	Aug-06	James Frierson: 991902 Pukeawe Circle Volcano Golf & Country Clu	0032118	240.00	H1003000 E0001064
271	Jun-06	Larry J Rivers: Lot 24 Botton SD S Kohala	0032190	75.00	H1003000 E0001064
271	Jul-06	Stephen Epstein: Lot 8 Kukuinui SD N Kona	0032239	375.00	H1003000 E0001064
271	Jun-06	Towne Realty Inc: Lots 30,32,33 Sunset Ridge PH2 Unit3 S Kohala	0032294	224.00	H1003000 E0001064
271	Aug-06	Alan B Bram: Lot 6 Kukuinui SD N Kona	0032319	329.00	H1003000 E0001064
271	Jun-06	Dennis Boyd: 54-2264 Kynnersley Rd N Kohala	0032333	512.00	H1003000 E0001064
271	Aug-06	Michael L Cudde: Waikoloa Village S Kohala	0032373	332.00	H1003000 E0001064
271	Jun-06	Braddock I Honma: P-8 Hawaii Belt Road Pa'aui	0032430	595.00	H1003000 E0001064
271	Aug-06	Douglas Ball: 36-2434 Mamelahoa Highway Laupahoehoe	0032432	1,008.00	H1003000 E0001064
271	Aug-06	Bruce W Herren: Lot 18 Makalei Est No Kona residence	0032447	367.00	H1003000 E0001064
271	Jul-06	Kristi J Parker: Lot7 Young SD N Kona	0032449	314.00	H1003000 E0001064
271	Jul-06	Kevin P Lowmey: Puu Nani SD S Kohala	0032532	499.00	H1003000 E0001064
271	Jun-06	Towne Realty Inc: Lot 31 Sunset Ridge PH3 Unit2 SD S Kohala	0032589	222.00	H1003000 E0001064
271	Jul-06	Gregory A Wittman: Waikoloa Village S Kohala	0032665	502.00	H1003000 E0001064
271	Aug-06	M & M Economy Building: Christian Pearson Waikoloa Village S Koha	0032671	407.00	H1003000 E0001064
271	Aug-06	Jimmy Ortiz: 722 Kaulele Place S Hilo	0032780	242.00	H1003000 E0001064
271	Aug-06	House-It Custom Homes LLC: Lot 15 Keauhou Est N Kona	0032834	325.00	H1003000 E0001064
271	Aug-06	Terry Vermeire: Lot 13 IO View Estates II N Kona	0032835	323.00	H1003000 E0001064
271	Aug-06	Ron G Bahm: Lot 9 Kona Lani Est N Kona	0032892	371.00	H1003000 E0001064
271	Sep-06	Towne Realty: Lots 6,16,24,26 Sunset Ridge PH3 Unit4 Laikoloa S Ki	0032939	1,476.00	H1003000 E0001064
271	Aug-06	Towne Realty: Lots 17,19,20 Sunset Ridge PH3 Unit4 Waikoloa	0032955	954.00	H1003000 E0001064
271	Aug-06	Brandyn C Moniz: 68-3609 Hooko Pl Waikoloa S Kohala	0033055	375.00	H1003000 E0001064
271	Jul-06	Zo LLC: William Zerfuss Kohala by the Sea	0033058	359.00	H1003000 E0001064
271	Sep-06	Schuler Homes: Lots 96,119,120 Lualai PH2B SD Kamuela S Kohala	0033099	938.00	H1003000 E0001064
271	Aug-06	Lois Martin: Lot 14 Kawena St SD N Kona	0033132	340.00	H1003000 E0001064
271	Aug-06	Richard Purdue: Waikoloa Village S Kohala	0033215	310.00	H1003000 E0001064
271	Sep-06	Schuler Homes: Lots 97,117,118 Lualai PH2B Kamuela S Kohala	0033237	932.00	H1003000 E0001064
271	Sep-06	Schuler Homes: Lots 98,99,101,102,114,115,116 Lualai PH2B SD Ko	0033238	2,540.00	H1003000 E0001064
271	Oct-06	Schuler Homes: Lots 100,107,108,109,110,111 Lualai PH2B SD S Kc	0033240	2,136.00	H1003000 E0001064
271	Oct-06	Schuler Homes: Lots 103 & 113 Lualai PH2B SD S Kohala	0033255	626.00	H1003000 E0001064
271	Aug-06	Richard A Feduska: Lot 11 Keopu Heights N Kona	0033272	359.00	H1003000 E0001064
271	Sep-06	Joseph Withers: 332 Luakaha Street Hilo	0033289	257.00	H1003000 E0001064
271	Aug-06	James E Hitzemann: Lot 10 Hualalai Hts N Kona	0033327	421.00	H1003000 E0001064
271	Aug-06	HHB & Associates LLC: Lots 1&4 Pualani Est N Kona	0033330	710.00	H1003000 E0001064
271	Aug-06	HHB & Associates LLC: Lots 22,30,31 Pualani Estates N Kona	0033331	1,065.00	H1003000 E0001064
271	Aug-06	HHB & Associates LLC: Lots 23,24,28,29 Pualani Estates N Kona	0033332	1,498.00	H1003000 E0001064
271	Oct-06	Justin Pitullo: 605 Ponahawai St S Hilo	0033363	448.00	H1003000 E0001064
271	Sep-06	Scott E Carter: Malina St S Kohala	0033409	422.00	H1003000 E0001064
271	Sep-06	Scott E Carter: Ehako St Waikoloa S Kohala	0033410	310.00	H1003000 E0001064
271	Sep-06	Scott E Carter: 68-3765 Mahina St Waikoloa S Kohala	0033411	313.00	H1003000 E0001064
271	Aug-06	Rodney Townes: Lot 3C Kealahake Homesteads N Kona	0033480	992.00	H1003000 E0001064
271	Oct-06	Robert K Kaopukiki Sr: 133456 Hookupu St Lailani Est SD Puna	0033546	537.94	H1003000 E0001064
271	Aug-06	Troy D Asuncion: Lot 10 Kukuinui SD N Kona	0033585	331.00	H1003000 E0001064
271	Oct-06	Skip Dahlen: Lot 8 Gomes Family SD Puupuanui Waiama N Kona	0033616	338.00	H1003000 E0001064
271	Aug-06	Stephen J Boyt: Lot E-3 Koyanagi SD N Kona	0033623	331.00	H1003000 E0001064
271	Sep-06	HHB & Associates LLC: Lot 12 Pualani Est N Kona	0033700	313.00	H1003000 E0001064
271	Sep-06	HHB & Associates LLC: Lots 13,15,25 Pualani Est PH2 N Kona	0033700	1,123.00	H1003000 E0001064
271	Sep-06	HHB & Associates LLC: Lots 26,27,32 Pualani Est PH2 N Kona	0033701	1,048.00	H1003000 E0001064
271	Sep-06	Maureen Reinke: Lot 44 Bayview Est PH2 N Kona	0033708	340.00	H1003000 E0001064
271	Sep-06	HHB & Associates LLC: Lots 8,17,18 Pualani Est PH2 N Kona	0033709	1,119.00	H1003000 E0001064
271	Sep-06	HHB & Associates LLC: Lots 19,20,21 Pualani Est PH2 N Kona	0033712	1,083.00	H1003000 E0001064
271	Sep-06	HHB & Associates LLC: Lots 14,16 Pualani Est PH2 N Kona	0033714	618.00	H1003000 E0001064
271	Oct-06	Construction Services & Mgt: James Taren Kohala Ranch SD N Kohi	0033864	389.00	H1003000 E0001064
271	Sep-06	Grant Kojima: Lot A10 Kona Highlands N Kona	0033872	369.00	H1003000 E0001064
271	Oct-06	Keller Cartledge LLC: 69-1660 Puako Beach Dr S Kohala	0033887	792.00	H1003000 E0001064
271	Oct-06	Jeff G Mahring: Sandalwood SD S Kohala	0033888	325.00	H1003000 E0001064
271	Sep-06	Richard G Biscardo: Lot 12 Bayview Est N Kona	0033898	323.00	H1003000 E0001064
271	Sep-06	Hamman Construction Co Inc: Lot 13 Bayview Est PH2 N Kona	0033937	349.00	H1003000 E0001064

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Acct #	Received	Name	Req# H-	Amount	Project #
271	Sep-06	Provision Technologies, Inc: Island Naturals Pahoa 151403 Pahoa Rd	0034186	325.00	H1003000 E0001064
271	Oct-06	General Construction Pacific: Lot 35 Bayview Est PH2 N Kona	0034223	333.00	H1003000 E0001064
271	Aug-06	Hawi Renewable Development LLC: final payment on multiple project	453-458	277,261.00	H1003000 E0001064
271	Feb-06	Anne T Thomas: Hokuakoa Café Hokuakoa, N Kona	0019840	4,748.00	H1003000 E0001065
271	Aug-06	Maryl Group Inc: Parrish res Lot 68 Hokuila SD ph1 S Kona	0021803	3,083.00	H1003000 E0001065
271	Aug-06	Hart Howerton: Outli S Kohala residence	0021893	1,428.00	H1003000 E0001065
271	May-06	Larry A Moen: Mika Ono's Agricultural Bldg Keelakekua N Kona	0023981	453.00	H1003000 E0001065
271	May-06	Tinguey Development Inc: Warehouse Bld Lot 11 Kohanaiiki Ind Park	0024364	5,014.00	H1003000 E0001065
271	Jun-06	Moss Engineering Inc: Waiulaula Mauna Kea S Kohala	0025336	455.00	H1003000 E0001065
271	Feb-06	Wallace T Oki PE Inc: Kinole Senior residence	0027221	6,018.00	H1003000 E0001065
271	Apr-06	AI&T Wireless Services: Cingular facility Pahoa Village Rd Marketpla	0027911	939.00	H1003000 E0001065
271	Apr-06	Aloha Aina Homes: McLean SD N Kona	0028360	1,015.00	H1003000 E0001065
271	Jun-06	UH Hilo Dir of Auxiliary Svcs: perm ug svc with rider	0028390	1,841.00	H1003000 E0001065
271	Sep-06	Michael K Balutski: 519 Lanikaula Street service	0028449	1,510.69	H1003000 E0001065
271	Feb-06	Hawi Renewable Dev LLC: HRO BA-up pwr @ Hawi, N Kohala	0029380	2,852.00	H1003000 E0001065
271	Sep-06	Paul & Dede Gillespie: Lot 114 Kohala Ranch N Kohala	0030580	608.00	H1003000 E0001065
271	Oct-06	Gina Y Whitney: Whitney SD Gate St Pauls Rd Honolulu N Kona	0031000	888.00	H1003000 E0001065
271	Mar-06	West Hawaii Water Co: Waikoloa Deep Well Pump #6	16461 & 20143	48,867.00	H1003000 E0001065
271	Apr-06	Moss Engineering Inc: Duplex @ Waiulaula @ Mauna Kea S Kohala	0025337	562.00	H1003000 E0001066
271	Feb-06	Alan Winters: Mana Ranch Dev SD, S Kohala	0025875	183.00	H1003000 E0001066
271	Feb-06	Skipp Fowler: Lot 53 Malu Ridge, N Kohala	0026434	35.00	H1003000 E0001066
271	Apr-06	Robert L Cross: Puakea Bay N Kohala	0028415	477.00	H1003000 E0001066
271	Mar-06	John L Baldwin: Lot 140 Waikoloa Village S Kohala	0030114	75.00	H1003000 E0001066
271	Mar-06	Lee Zimmerman: Kona Palisades N Kona	0030361	150.00	H1003000 E0001066
271	Jul-06	Moss Engineering Inc: Duplex Waiulaula Mauna Kea S Kohala	0025342	569.00	H1003000 E0001067
H1003000 TOTAL CIAC COLLECTED				521,510.63	
252	Jun-06	Kohala-Woodvale Associates LLC: Unit 4A Kaunaoa Mauna Kea	0024576	1,129.00	H1003000 E0001064
252	Jun-06	Kohala-Woodvale Associates LLC: Unit 4B Kaunaoa Mauna Kea	0024579	1,115.00	H1003000 E0001064
252	Mar-06	Kohala-Woodvale Associates LLC: Unit 6A Kaunaoa @ Mauna Kea	0024582	993.00	H1003000 E0001064
252	Mar-06	Kohala-Woodvale Associates LLC: Unit 6B Kaunaoa @ Mauna Kea	0024583	993.00	H1003000 E0001064
252	Mar-06	Kohala-Woodvale Associates LLC: Unit 7A Kaunaoa @ Mauna Kea	0024584	1,052.00	H1003000 E0001064
252	Mar-06	Kohala-Woodvale Associates LLC: Unit 7B Kaunaoa @ Mauna Kea	0024585	1,065.00	H1003000 E0001064
252	Jun-06	Kohala-Woodvale Associates LLC: Unit 8A Kaunaoa Mauna Kea	0024586	1,129.00	H1003000 E0001064
252	Jun-06	Kohala-Woodvale Associates LLC: Unit 8B Kaunaoa Mauna Kea	0024587	1,115.00	H1003000 E0001064
252	Jun-06	Kohala-Woodvale Associates LLC: Unit 9A Kaunaoa Mauna Kea	0024588	1,086.00	H1003000 E0001064
252	Jun-06	Kohala-Woodvale Associates LLC: Unit 9B Kaunaoa Mauna Kea	0024589	1,115.00	H1003000 E0001064
252	Jul-06	Kohala-Woodvale Assoc LLC: Unit 10A Kaunaoa Mauna Kea Estates	0024590	1,157.00	H1003000 E0001064
252	Jul-06	Kohala-Woodvale Assoc LLC: Unit 10B Kaunaoa Mauna Kea Estates	0024591	1,072.00	H1003000 E0001064
252	Mar-06	Moss Engineering Inc: Mauka Cottages Lot 2 Kukio PH3 Inc2 SD	0028608	1,004.00	H1003000 E0001064
252	Mar-06	Moss Engineering Inc: Mauka Cottages Lot 2 Kukio PH3 Inc2 SD	0028613	1,004.00	H1003000 E0001064
252	Mar-06	Glen R White Jr: residence 112800 Lehua St Fern Acres SD	0029606	2,336.00	H1003000 E0001064
H1003000 TOTAL ADVANCES COLLECTED				17,365.00	
271	Sep-06	George J Handgis: Hoku Rd Keauhou Bay N Kona	0015378	12,100.00	H1008000
271	Jul-06	Sunstone Realty Partners, LLC: Kona Sea Ranch SD Kukuiopee S K	0024173	20,483.00	H1008000
271	Mar-06	Foster Kern LLC: 12 lots Ulupono Cir phase 3	0024713	4,213.00	H1008000
271	Feb-06	D R Horton-Schuler Homes LLC: 86 Lots Lualai SD Parker Ranch PH	0025264	11,499.00	H1008000
271	Mar-06	Pauls Repair Service: Ogasawara Svc Station Kahakai Blvd	0025840	7,418.00	H1008000
271	Aug-06	Ashford W Alices: Kohanaiiki Homesteads N Kona	0026430	654.00	H1008000
271	Apr-06	Kalline Subdivision: Hainai street	0026920	9,024.00	H1008000
271	Aug-06	LDS Kilauea-Kaumana Wards: Lot C-2 Ponahawai Street S Hilo	0029498	7,379.00	H1008000
271	Aug-06	Michael A Willard: 36-2289 Mamalahoe Highway Laupahoehoe	0030529	6,315.00	H1008000
271	May-06	Tinguey Development Inc: Riser for Waimea Parkside PUD S Kohala	0030819	702.00	H1008000
271	Oct-06	Emily M Elssner: 184779 Hope Place Mt View Ranches SD Puna	0031412	1,962.00	H1008000
H1008000 TOTAL CIAC COLLECTED				81,779.00	
252	Feb-06	Bridge Aina Lea LLC: Aina Lea Residential Golf Community SD	0016123	106,876.00	H1008000
252	Mar-06	Bill McCowatt: Kahana Road, Ahualoa, Hamakua	0017056	723.00	H1008000
252	Feb-06	Betsy Ramstad: Palm Parkway, Hove, Kau	0017616	716.00	H1008000
252	May-06	David S Deluz Sr Trust: 10 lots Pasaulo Mauka Road Hamakua	0019150	97,081.00	H1008000
252	Feb-06	Alfred Lerma Jr, Esq: Kuamoo, N Kona residence	0019386	223.00	H1008000
252	Apr-06	Jeffrey B Martin: Hokuakoa N Kona	0019780	7,130.00	H1008000
252	Mar-06	Wallace T Oki PE Inc: Ooma Plantation N Kona	0020877	6,423.00	H1008000
252	Jan-06	Robert Rossman - Kahaluu-Keauhou residence	0022586	2,179.00	H1008000
252	May-06	Yosoto Egami: Onouli S Kona	0023741	6,091.00	H1008000
252	Jan-06	Albert Funk - Hawaii Blvd, Hove, Kau residence	0024312	5,185.00	H1008000
252	Apr-06	Pua Mauka Development LLC: Coconut Dr Hove Kau	0024371	19,733.00	H1008000
252	Feb-06	Wallace T Oki PE Inc: Hanalei SD, Hawi, N Kohala	0024422	8,234.00	H1008000
252	Jul-06	Wallace T Oki PE Inc: Royal Kamehameha Gardens Keopu N Kona	0024629	10,405.00	H1008000
252	Mar-06	Foster Kern LLC: 12 lots Ulupono Cir phase 3	0024713	66,537.00	H1008000
252	Sep-06	Barbara McDonagh: Kache Ranch Estates S Kona	0024762	363.00	H1008000
252	Aug-06	Anne Losansky: 87-2971 Mamalahoe Hy Kukuiopee 2nd S Kona	0025244	629.00	H1008000
252	Mar-06	Anita Hecht Trust: Line Ext @ Waikohoe, Hamakua	0025430	4,162.00	H1008000
252	Aug-06	Anita Hecht Trust: 47-5080 Hawaii Belt Rd Waikohoe Hamakua	0025430	14,392.00	H1008000
252	Oct-06	Kristine Myers: Lehua Lane Hove Kau	0025593	3,774.00	H1008000
252	Jan-06	John Edwards Constr Co Inc - Lks, LLC lot 102 Lono Kona	0025697	701.00	H1008000
252	Feb-06	John Edwards Constr Co Inc: Lks, LLC on Lot 102 Lono Kona SD	0025697	6,304.00	H1008000

Hawaii Electric Light Company, Inc.

2006 CUSTOMER CIAC AND ADVANCES WORKPAPER

Acct #	Received	Name	Req# H-	Amount	Project #
252	Jun-06	Edward Paulos: Residence Chong Street Chong SD S Hilo	0026125	1,252.00	H1008000
252	Mar-06	Wallace OKI, PE, Inc: 3 Units Kaiulani Est Condo SD	0026723	2,406.00	H1008000
252	Jun-06	Wallace T Oki PE Inc: Williams' Res Keolu Mauka SD N Kona	0026810	6,088.00	H1008000
252	Jan-06	Engineers Surveyors Hawaii Inc - 3 lots Honoipu Subd	0026837	1,475.10	H1008000
252	Apr-06	Kalline Subdivision: Hailhai street	0026920	6,343.00	H1008000
252	Feb-06	Sandra C Haiku: Keonelehu Ave, Volcano residence	0026992	2,992.00	H1008000
252	Jul-06	Sandra C Haiku: Keonelehu Avenue Volcano Hawaii	0026992	3,422.00	H1008000
252	Jun-06	Shella Conant: Alanui Akakani Road Volcano	0027068	2,796.00	H1008000
252	Apr-06	Christlan K O Bernadzki-Jacobi: Pohoiki Rd Lanipuna Gardens	0027357	3,894.00	H1008000
252	Jun-06	Douglas D Deporte: 14 Lots Kupuulau Heights Incl Koaniani St S Hilo	0027475	18,376.00	H1008000
252	Mar-06	Robert L Helstrom: Kahaluu Farmlots N Kona	0027583	4,801.00	H1008000
252	Jan-06	Neal H Kadooka - Kealekua residence	0028108	1,538.00	H1008000
252	Jun-06	Sharon S Welborn: Paradise Pkwy Hove Kau	0028421	2,840.00	H1008000
252	Feb-06	Frank M Lawrence: North Kopua Road residence	0028441	1,955.00	H1008000
252	Jul-06	Frank D Duarte: Road 8 Hawaiian Acres SD Puna	0028739	2,427.00	H1008000
252	Mar-06	Dan Bontecou: Reef Pkwy, Hove, Kau	0028910	16,806.00	H1008000
252	Sep-06	Keolu Alina Association: Keolu Alina Prop SD N Kona	0029075	9,402.00	H1008000
252	Apr-06	Kim Christensen: Warehouse & Honsunau S Kona	0029132	1,626.00	H1008000
252	Feb-06	John Pew: Lot 65 Aloha Drive Ainaloa SD, Puna	0029138	9,963.00	H1008000
252	Apr-06	Timothy Quander: 184741 Ihope Rd Mountain View Ranches SD	0029162	2,309.00	H1008000
252	Feb-06	Bob Davis: Pepekeo residence	0029238	5,884.00	H1008000
252	Apr-06	Laraine Ariam: residence Kahiwi Homesteads S Hilo	0029239	1,330.00	H1008000
252	Feb-06	Charles L Rapoza: Laihulu Road residence	0029378	6,493.00	H1008000
252	Mar-06	George N Kamakahi: Residence 699 Railroad Ave S Hilo	0029382	3,849.00	H1008000
252	Feb-06	Hawl Renewable Dev LLC: HRD Backup pwr @ Hawi	0029395	2,739.00	H1008000
252	Apr-06	Eltsworth Demattios: Road 9 Hwn Acres SD	0029398	7,170.00	H1008000
252	Oct-06	Herbert J Go: St Paul Rd Kealekua N Kona	0029440	3,040.00	H1008000
252	Feb-06	Michael Breez: Malama Road, Lelan Estates residence	0029533	1,617.00	H1008000
252	Jul-06	Larry D Keen: Hove, Kau	0029576	7,284.00	H1008000
252	Oct-06	Chris Brithante LLC: 6 lots Kukui Camp SD Ooala Hamakua	0029787	19,817.00	H1008000
252	Sep-06	Ignacio Aguilar: Ignacio / Stephanie res Kaao Homesteads Hamakua	0030209	307.00	H1008000
252	May-06	Francis PN Ke: Mitoli Hts S Kona	0030309	704.00	H1008000
252	May-06	Imata & Associates Inc: 7 lots of King SD Kaloko Mauka N Kona	0030507	4,818.00	H1008000
252	Aug-06	Imata & Associates Inc: 7 lots King SD Kaloko Mauka N Kona	0030507	41,560.00	H1008000
252	May-06	John K Simonet: 113306 Lehua Street Farm Acres SD residence	0030527	2,404.00	H1008000
252	Jun-06	Gerald Hollins: Residence Chin Chuck Rd Hakalau S Hilo	0030575	914.00	H1008000
252	Jun-06	Jack A Kuntz: Kioakaa Naalehu Kau	0030576	10,483.00	H1008000
252	Sep-06	Dan Dixon & Robert Ivancic: 1 lot Hanalei Drive Ainaloa SD Puna	0030781	7,838.00	H1008000
252	Aug-06	Stanley K Zakahi: Hokuakoa N Kona	0030817	3,499.00	H1008000
252	May-06	Wallace T Oki PE Inc: Weimes Parkside PUD S Kohala	0030819	5,842.00	H1008000
252	May-06	Hawaiian Paradise Park LLC: 18th Ave Hwn Paradise Park SD	0030831	7,811.00	H1008000
252	Mar-06	Botton Inc: Koyanagi SD @ Hienaloh, N Kona	0030857	6,608.00	H1008000
252	Jul-06	David A Wensloff: Princess Kaiulani Blvd Hove Kau	0030926	15,282.00	H1008000
252	Sep-06	Stan Schierman: Lot 16 Oneioa Street Lelan Estates SD Puna	0031101	3,779.00	H1008000
252	Jul-06	Keoni Ellison: Gardenia St Farm Acres SD Puna	0031248	6,547.00	H1008000
252	Aug-06	Hawaii Island Comm Dev Corp: Hualalai Elderly PH3 N Kona	0031444	6,473.00	H1008000
252	Oct-06	John R Armstrong: Lot 2634 3rd Ave Paradise Park SD Puna	0031528	2,586.00	H1008000
252	Jun-06	Roland Ignacio: Res 113423 Lehua St Farm Acres SD Puna	0031644	1,984.00	H1008000
252	Sep-06	Carnor Sumida: Lot 702 28th Ave Hwn Paradise Park SD Puna	0031696	1,576.00	H1008000
252	Aug-06	Ernest M Tavares: Road8 Orchid Isle Estates SD Puna residence	0031786	3,880.00	H1008000
252	Jul-06	Bill Hostmeyer: Happy Homes Road Kurtistown Puna Hawaii	0031810	585.00	H1008000
252	Aug-06	Tom M Migflori: Lot 261 3rd Street Mauna Loa Estates SD Volcano	0032140	1,341.00	H1008000
252	Sep-06	Michael J Bigheus: Lot 881 10th Ave Hawaiian Paradise Park Puna	0032207	1,440.00	H1008000
252	Sep-06	Larry C Bianchi: Leonaka Road Mountain View	0032377	1,248.00	H1008000
252	Sep-06	Debra Rizzo: Huanani Road Puna	0032698	1,088.00	H1008000
252	Oct-06	Inaba Engineering: 5 lots Keiki Alina SD Hailhai Street S Hilo	0033142	(20,634.00)	H1008000
252	Aug-06	Inaba Engineering: 5 lots Keiki Alina SD Hailhai Street S Hilo	0033142	20,634.00	H1008000
252	Sep-06	Bartley T Cahoon: 7 Lots Kolesas Hualalai Kalaoe 4th N Kona	0033271	3,209.00	H1008000
252	Oct-06	John D Heide: riser pole Heide SD St Paul's Rd N Kona	0034123	5,704.00	H1008000
H1008000 TOTAL ADVANCES COLLECTED				680,508.10	
271	Feb-06	State of Hawaii DAGS: Keakealani Office Building	0012469	1,253.00	H1017000
271	Apr-06	ECS Inc: Hualalai Mauka Cart Barn @ Hualalai N Kona	0023018	2,864.00	H1017000
271	May-06	Ronald NS Ho & Associates: Uplands 918' Reservoir Mauna Kea Res	0024884	6,256.00	H1017000
271	Apr-06	ECS Inc: Hualalai Mauka Cart Barn @ Hualalai N Kona	0025029	6,023.00	H1017000
271	Mar-06	ECS Inc: Hualalai Mauka Clubhouse N Kona	0025030	5,889.00	H1017000
271	Mar-06	Russell E Roberts: Onouli, S Kona	0025114	2,215.00	H1017000
271	Jun-06	Wallace T Oki PE Inc: 38 Lots Sunset Ridge PH3 Unit4 SD Waikoloa	0025790	13,911.00	H1017000
271	Mar-06	Pauls Repair Service: Ogasawara Svc Station Kahakal Blvd	0025839	9,089.00	H1017000
271	May-06	Wallace T Oki PE Inc: Saffield Guest Hales @ Kou N Kohala	0026019	4,856.00	H1017000
271	Apr-06	Botton Inc: Koyanagi SD @ Holuakoa, N Kona	0026198	118.00	H1017000
271	Feb-06	John C Stefany: Lot 26 Makalei Estates N Kona residence	0026286	3,481.00	H1017000
271	Jul-06	HNB & Assoc LLC: Lot 41A Pua Lani Ranch N Kona	0026602	104.00	H1017000
271	Jan-06	Innovations Public Charter Sch: Puaa 3rd	0026641	2,886.00	H1017000
271	Jan-06	Thomas W Pack: Makalei Est residence	0026925	4,218.00	H1017000
271	May-06	Alnola Inc: Smith Res Lot 15B-4 Kukio Bay Beach Club SD N Kona	0027023	2,807.00	H1017000
271	Apr-06	Kohala-Woodvale Associates LLC: Recreation bldg Kaunaoa Mauna I	0027172	3.00	H1017000
271	Sep-06	Burke Matsuyama: Lot4 Kohanaki Bus Park PH1 SD N Kona	0027635	2,975.00	H1017000

Hawaii Electric Light Company, Inc.

2006 CUSTOMER CIAC AND ADVANCES WORKPAPER

Acct #	Received	Name	Req# H.	Amount	Project #
271	Sep-06	Burke Matsuyama: Lot4 Kohanaki Bus Park PH1 SD N Kona	0027639	3,348.00	H1017000
271	Jul-06	Harold H Miura Inc: Honoli Ridge Inc1 Puakaa S Hilo	0028078	4,817.00	H1017000
271	May-06	CH Dept Public Works: Signal Light Hinatani St Mamalahoa (GET Inc	0028081	983.00	H1017000
271	Apr-06	Modisher Contracting Services: Lot 81 Waikiki Ranch S Kohala	0028443	3,600.00	H1017000
271	Sep-06	Albert Chong Assoc: Waikoloa Beach Villas PH2 (2/06)	0028680	(5,012.00)	H1017000
271	Sep-06	Albert Chong Assoc: Waikoloa Beach Villas PH2 (11/05)	0028680	(557.00)	H1017000
271	Feb-06	Albert Chong Assoc: Waikoloa Beach Villas PH2	0028680	5,012.00	H1017000
271	Mar-06	Koyo USA Corp: Bld 3 of Koyo USA Corp Development Keshole N K	0028691	8,408.00	H1017000
271	Mar-06	Kukio Bay Resorts: Kukio Water Filtration Plant N Kona	0028916	7,714.00	H1017000
271	Feb-06	Kohala Creative Const LLC: Naupaka Kai Circle Waikoloa lot 2 SD	0029577	2,970.00	H1017000
271	May-06	Sun Cablevision of Hawaii: Oceanic Time Warner Lot 16 Kaloko Ligh	0029717	3,229.00	H1017000
271	May-06	Beverly L Fuller: Res Lot 9 Kaiwili Homestead S Hilo	0029786	4,113.00	H1017000
271	Mar-06	Fukunaga Electrical: 3/25/06 work	0029922	3,055.00	H1017000
271	May-06	Fukunaga Electrical: 5/20-21/06 scheduled work	0029922	3,929.00	H1017000
271	Apr-06	Puakea Ranch LLC: Puakea Ranch SD	0029956	314.00	H1017000
271	Jul-06	Puakea Ranch LLC: Puakea Ranch S/O N Kohala	0029956	2,826.00	H1017000
271	Apr-06	Ken W Lundy: Res on lot 21 @ Makalei Est N Kona	0030180	4,022.00	H1017000
271	Sep-06	Mike Krochins: Susan Senti Makalei Plantations Ph II residence (5/06	0030531	(3,382.00)	H1017000
271	Sep-06	Mike Krochins: Res Susan Senti Makalei Plantations PH2 N Kona	0030531	3,382.00	H1017000
271	Aug-06	Mike Krochins: Susan Senti Makalei Plantations Ph II residence	0030531	3,382.00	H1017000
271	May-06	Sun Cablevision of Hawaii: Oceanic Time Warner Lot 16 Kaloko Ligh	0030758	10,388.00	H1017000
271	Jun-06	Albert Chong Assoc: Kaunaoa Entry Gate Mauna Kea S Kohala	0030957	2,729.00	H1017000
271	Jul-06	Schilling Construction Inc: Craig Wells Kohala Ranch N Kohala	0031024	5,118.00	H1017000
271	May-06	Nicholson Construction: Lot 20 White Sands Puaea SD S Kohala	0031210	1,589.00	H1017000
271	Jun-06	Hualalai Investors LLC: Hualalai Parcel 18B Hualalai Resort	0031232	16,868.00	H1017000
271	Jul-06	Robert L Almeida Jr: Anekona Estates S Kohala	0031639	725.00	H1017000
271	Aug-06	Paul & Dede Gillespie: Kohala Ranch N Kohala	0032145	3,478.00	H1017000
271	Aug-06	Bruce W Herman: Lot 18 Makalei Est No Kona residence	0032516	4,041.00	H1017000
271	Oct-06	Henry Roxburgh: Anekona Est S Kohala	0032754	3,453.00	H1017000
H1017000 TOTAL CIAC COLLECTED				172,971.00	
252	Jun-06	Wallace T Oki PE Inc: 38 Lots Sunset Ridge PH3 Unit4 SD Waikoloa	0025790	87,075.00	H1017000
252	May-06	Wallace T Oki PE Inc: Saalfeld Guest Hales @ Kou N Kohala	0026019	7,711.00	H1017000
252	Jun-06	Ronald NS Ho & Associates: Anaehoomalu-Mauna Lanl Kings Land	0026075	40,000.00	H1017000
252	Oct-06	Hawaii Island Comm Dev Corp: Hualalai Elderly PH3 N Kona	0026642	8,977.00	H1017000
252	May-06	WB KD Acquisitions, LLC: Kaupulehu Dev Lot 4A N Kona	0026662	124,225.00	H1017000
252	May-06	Wallace T Oki PE Inc: 81 Units Makana Kai Wehikani Inc 2 Waikoloa	0026026	83,744.00	H1017000
252	Sep-06	Albert Chong Assoc: Waikoloa Beach Villas PH2 S Kohala	0026680	557.00	H1017000
252	Sep-06	Albert Chong Assoc: Waikoloa Beach Villas PH2 S Kohala	0026680	5,012.00	H1017000
252	Sep-06	Albert Chong Assoc: Waikoloa Beach Villas PH2 S Kohala	0026680	14,347.00	H1017000
252	Mar-06	WB KD Acquisitions LLC: Kaupulehu Dev Lot P-4A Phase2	0028828	37,780.00	H1017000
252	Apr-06	Puakea Ranch LLC: Puakea Ranch SD	0029956	3,914.00	H1017000
252	Jul-06	Puakea Ranch LLC: Puakea Ranch S/O N Kohala	0029956	35,221.00	H1017000
252	Jul-06	Robert L Almeida Jr: Anekona Estates S Kohala	0031639	4,018.00	H1017000
252	Oct-06	North Hawaii Construction Inc: David Sonne Kohala Ranch	0032528	3,871.00	H1017000
H1017000 TOTAL ADVANCES COLLECTED				456,450.00	

NOTE 1 November Piller Date as 11/9/06

SOURCE Accounting Records thru 10/31/06

CA-IR-425
 ATTACHMENT 3
 DOCKET NO. 05-0315
 PAGE 7 OF 7

Hawaii Electric Light Company, Inc.
IN-KIND CIAC FOR H0000725, QUEEN K WIDENING PROJECT

Queen K Widening Project - Cost for 12KV Underground Distribution Line (SOH Part Only)			
Item	\$ per 1000 feet	Source	Comments
Engineering	\$0	KRW	Both Consulting Engineering and HELCO internal engineering
PUC Approval	\$0	KRW	Preparation of application and follow-up
Permits	\$0	KRW	DOT, etc.
Trenching	\$40,000	Ed	Trench is 2 feet wide by 5 feet deep. Assume worst possible terrain and soil conditions.
Fluidized Thermal Backfill	\$0	KRW	
Concrete encasement	\$75,000	Ed	Concrete encasement is 2.5 feet deep
Remaining backfill	\$25,000	Ed	Remaining backfill is native soils
Conduit (Materials)	\$15,000	KRW	Quantity of 4, 6" Sch. 80 arranged 2X2 in trench
Conduit (Labor)	\$14,000	Ed	
Manhole (Materials)	\$12,000	Ed	Manholes 6' X 11' (assume one manhole per each 1000 feet)
Manhole (Labor)	\$25,500	Ed	
Wire (Materials)	\$0	SMU	
HELCO Installation Labor	\$0	KRW	
Project/Construction Management	\$0	KRW	
Cost per 1000-feet =	\$206,500		Excludes the cost of two risers

Added Cost for UG Distribution Line	
Enter number of feet ->	24
Cost Excluding Risers	\$4,956
Add Cost of Risers	\$20,000
Total =	\$24,956

CA-IR-426

Ref: HELCO-WP-1401 & Response to CA-IR-182 (Plant Additions).

In response to CA-IR-182, HELCO provided PIAs for 18 of the 21 projects set forth on HELCO-WP-1401 in excess of \$500,000. Pages 23-27 of Attachment 1 represent the PIA for Project H0000725, Queen K-Kaiwi-Palani 69KV. In general terms, the PIA involves HELCO relocating wood/ steel poles, circuits, conductors and communications to facilitate plans by the state of Hawaii to widen portions of Queen K Highway. Please provide the following:

- a. Is the project estimate of \$1,642,669 still an accurate estimate of the plant addition? Please explain.
- b. Please provide a breakdown of the \$1,642,669 project estimate between major components (e.g., wood poles, steel poles, circuits, etc.). If the requested information is not available, please explain.
- c. The "purpose/objective" and "scope description" sections (Attachment 1, page 23) generally discuss the relocation effort and refer to removal of existing facilities. Please provide the following:
 1. Upon completion of the project, please confirm that the cost of the original poles, circuits, etc. will be retired. If this cannot be confirmed, please explain.
 2. Please provide the original cost of the original poles, circuits, etc. to be retired.
 3. Please confirm that the \$1,642,669 project estimate represents the cost of the new construction, not the cost of new construction less the original cost of plant to be retired. If this cannot be confirmed, please explain.
 4. Does the 2006 test year rate case forecast reflect the retirement of the original cost of poles, circuits, etc.? If so, how? If not, why not?
- d. The "contributions" section (Attachment 1, page 27) identifies CIAC to be provided by the State, including "In Kind" (\$26,040 for underground infrastructure) and "In Cash" (\$488,479 for the State's share of wood pole relocation), including GET. Please provide the following:
 1. Is the \$1,642,669 project estimate gross or net of these contribution amounts? Please explain.
 2. Have these contributions been explicitly recognized in the 2006 test year rate case forecast?
 - (a) If so, how?
 - (b) If not, why not?
- e. The "cost sharing" section (Attachment 1, page 27) identifies \$47,900 to be provided by the State, including GET, for its share of the cost to relocate an existing underground distribution line. Please provide the following:
 1. Is the \$1,642,669 project estimate gross or net of the State's share of the relocation cost? Please explain.
 2. Have the relocation costs been explicitly recognized in the 2006 test year rate case forecast? If so, how? If not, why not?

HELCO Response:

- a. The project estimate of \$1,642,669 has been updated to reflect current on-cost rates, labor rates and material costs. The current estimate is \$1,734,906. This update is performed monthly in Pillar. The current Pillar estimate is attached as CA-IR-426 Attachment 1.
- b. See CA-IR-426 Attachment 1.
- c.1. Upon completion of the project, the cost of the original poles, circuits, etc. will be retired.
- c.2. See CA-IR-426 Attachment 2 .
- c.3. The \$1,642,669 project estimate (now \$1,734,906) represents the cost of the new construction, not the cost of new construction less the original cost of plant to be retired.
- c.4. Yes. The test year retirement does not specifically identify this particular project. However, any retirements from this project are considered to be part of the overall estimate of the test year retirements through the average percentage method used. See HELCO T-14, pages 7-8.
- d.1. The \$1,642,669 project estimate is gross of these contribution amounts. See CA-IR-426 Attachment 1 line 20. The in-kind contribution is included. (The figures are not identical for the same reason as part a. The cash contribution is included in the capital cost estimate as well.
- d.2.(a). No. Contributions from this project was not explicitly listed in the 2006 test year of contributions.
- d.2.(b). This project was originally forecasted to be completed in 2005 however due to complexities of obtaining regulatory approval and announcement from the steel pole

vendor that the lead time will be extended, it was not clear what the schedule would be. There was a possibility of completing the project in 2006 if we change to concrete poles and if not the project would slip to 2007. While these evaluations were occurring, and the decision was made that we could complete the project in 2006, we missed listing the CIAC on HELCO-WP-1409 (A). HELCO will adjust the 2006 test year CIAC forecast at the end of 2006 with actual year end information.

- e.1. The \$1,642,669 project estimate is gross of this cost sharing amount. This amount is for the replacement of a 5-way vacuum switch near the waste water treatment plant. It is necessary to relocate the switch out of the way of the new highway.
- e.2. The \$47,900 listed under the "cost sharing" section was listed in error. The cost of the 12KV underground distribution line is included in the \$488,479 CIAC. HELCO will adjust the 2006 test year CIAC forecast at the end of 2006 with actual year end information.

Line	Description	Amount
1	Stores On-costs	\$38,322
2	Energy Delivery On-costs	\$31,554
3	Corp Admin On-costs	\$15,346
4	Cust Install On-costs	\$135,772
5	Non-productive Wages On-costs	\$15,190
6	Empl Benefits On-costs	\$34,139
7	Payroll Tax On-costs	\$9,091
8	Backfill Holes	\$40,000
9	Dig Pole Holes	\$189,000
10	Mobilization (Equipment & Labor)	\$77,500
11	Site Prep & Access Road	\$100,000
12	Removal of Transmission Poles	\$120,870
13	Crew-Supervisor-NI	\$29,161
14	Crew - Inspection, etc.	\$33,391
15	Omnirupter 25KV Switch	\$3,800
16	Outside Materials - Includes Concrete Poles	\$243,687
17	Stock Material - Includes wire	\$77,000
18	Outside Construction (Contract Labor)	\$433,000
19	Crew-Sup-NR	\$2,684
20	CIAC - UG Distribution	\$24,956
21	Outside Svcs - Legal Review (PUC Application)	\$14,400
22	Customer Engineering Supervisor	\$9,806
23	Customer Designer	\$10,915
24	Customer Eng-Planner Aid-9s	\$1,708
25	Outside Engineering	\$23,400
26	Public Outreach Efforts	\$9,279
27	Civil-Land Surveyor	\$1,669
28	Civil-Supervisor	\$2,274
29	Civil-Rodman	\$2,010
30	Civil-Transit Tech	\$2,727
31	Planning-Engineer	\$2,253
	Project Total	\$1,734,906*

* - This total does not precisely align with the original plant add amount of \$1,642,669 in WP-1401 because Pillar automatically updates estimates according to the latest figures for overhead current on-cost rates, labor rates and material costs. The total of \$1,734,906 is Pillar's total as of 10/13/06.

a. Hawaii Electric Light Company, Inc.
Queen K Highway Widening Project
Remaining Net Book Value of Facilities To Be Removed

		a	b	c	d (b+c)	e (a-d)	
Acct 355		Original		Depreciation	Depreciation	Total	Remaining
Qty	Description	Cost	Vintage	@ 3.5%/year (7/1/83-12/31/86)	@ 4.2%/year (1/1/87-Present)	Depreciation Taken	Net Book Value
1	Anchor	327.06	1983	34.34	274.73	309.07	17.99
1	Guy Wire	1,697.72	1983	178.26	1,426.08	1,604.34	93.38
5	70' Creosote Poles	9,382.55	1984	656.78	7,881.34	8,538.12	844.43
3	Guy Wires	5,093.17	1984	356.52	4,278.26	4,634.78	458.39
1	75' Creosote Pole	10,491.81	2004		881.31	881.31	9,610.50
		<u>26,992.31</u>		<u>1,225.90</u>	<u>14,741.72</u>	<u>15,967.62</u>	<u>11,024.69</u>
Acct 356		Original		Depreciation	Depreciation	Total	Remaining
Qty	Description	Cost	Vintage	@ 3.5%/year (7/1/83-12/31/86)	@ 3.9%/year (1/1/87-Present)	Depreciation Taken	Net Book Value
21	69kV Insulators	975.39	1984	68.28	760.80	829.08	146.31
6,636 ft	336.4 KCM conductor	10,059.93	1984	704.20	7,846.75	8,550.95	1,508.98
2,212 ft	#1/0 shield wire	1,809.86	1984	126.69	1,411.69	1,538.38	271.48
3	69kV Insulators	1,854.27	2004		144.63	144.63	1,709.64
		<u>14,699.45</u>		<u>899.17</u>	<u>10,163.87</u>	<u>11,063.04</u>	<u>3,636.41</u>
Acct 364		Original		Depreciation	Depreciation	Total	Remaining
Qty	Description	Cost	Vintage	@ 5.1%/year (7/1/83-12/31/86)	@ 5.2%/year (1/1/87-Present)	Depreciation Taken	Net Book Value
3	40' Creosote Poles	1,119.06	1983	171.22	1,163.82	1,335.04	(215.98)
11	Crossarms	2,602.18	1983	398.13	2,706.27	3,104.40	(502.22)
1	Crossarm	483.17	2004		50.25	50.25	432.92
		<u>4,204.41</u>		<u>569.35</u>	<u>3,920.34</u>	<u>4,489.69</u>	<u>(285.28)</u>
Acct 365		Original		Depreciation	Depreciation	Total	Remaining
Qty	Description	Cost	Vintage	@ 5.6%/year (7/1/83-12/31/86)	@ 4.0%/year (1/1/87-Present)	Depreciation Taken	Net Book Value
6	Disconnect Switches	3,215.71	1983	540.24	2,572.57	3,112.81	102.90
6,636 ft	336.4 KCM conductor	13,894.48	1983	2,334.27	11,115.58	13,449.85	444.63
2,212 ft	#3/0 neutral	3,493.93	1983	586.98	2,795.14	3,382.12	111.81
		<u>20,604.12</u>		<u>3,461.49</u>	<u>16,483.29</u>	<u>19,944.78</u>	<u>659.34</u>

a. Hawaii Electric Light Company, Inc.
Queen K Highway Widening Project
Remaining Net Book Value of Facilities To Be Removed

		a	b	c	d (b+c)	e (a-d)	
Acct 366		Original		Depreciation	Depreciation	Total	Remaining
Qty	Description	Cost	Vintage	@ 2.9%/year (7/1/83-12/31/86)	@ 3.0%/year (1/1/87-Present)	Depreciation Taken	Net Book Value
20 ft	5" PVC Risers	1,545.62	1983	134.47	927.37	1,061.84	483.78
		<u>1,545.62</u>		<u>134.47</u>	<u>927.37</u>	<u>1,061.84</u>	<u>483.78</u>
Acct 367		Original		Depreciation	Depreciation	Total	Remaining
Qty	Description	Cost	Vintage	@ 3.4%/year (7/1/73-12/31/86)	@ 4.1%/year (1/1/87-Present)	Depreciation Taken	Net Book Value
1	Padmount 5-Way Vacuum Switch	4,874.84	1990		3,197.90	3,197.90	1,676.94
		<u>4,874.84</u>		<u>-</u>	<u>3,197.90</u>	<u>3,197.90</u>	<u>1,676.94</u>
TOTAL		<u>72,920.75</u>				<u>55,724.87</u>	<u>17,195.88</u>

CA-IR-427

Ref: HELCO-WP-1401 & Responses to CA-IR-180, CA-IR-181 & CA-IR-182 (Plant Additions).

The referenced responses identify various revisions (e.g., completion dates, project cost estimates, etc.) to HELCO's original forecast of test year plant additions. In light of the number of revisions identified by the Company, please update HELCO-WP-1401 showing HELCO's current assessment of plant additions, by project, expected to be completed in the 2006 forecast test year. [If the requested information was previously provided by HELCO or the Company is already in the process of compiling such update, please so state and provide a pinpoint reference to the documents containing the requested update.]

HELCO Response:

HELCO has updated the 2006 plant addition forecast based on November's PILLAR forecast (includes actual cost through October 31, 2006) as of November 9, 2006. See Attachment 1 of this response. The test year 2006 plant addition has increased from \$45,318,000 as shown in HELCO-1401 to \$49,610,002 as shown on page 5 of Attachment 1 of CA-IR-427 (HELCO-WP-1401 Update). This is an increase of test year plant additions of \$4,292,002. The increase reflects plant additions recorded as of October 31, 2006 and forecasts for November and December 2006. The test year plant additions increased primarily due to an increase of customer related projects. Attachment 1 is the original HELCO-WP-1401 but expanded to reflect updates to the originally listed projects, new projects that have been added to the capital budget and scheduled to be plant added in 2006, and carryover projects that required funds to complete. We have funded the new projects, generally from the Board approved budget, by transferring funds from blankets, or from cancelled, or deferred, or reduced scoped projects. For example, for the customer projects, depending on the type and size of the new project, we would first transfer funds from the blankets such as H0007000 Unforseeable OH Cust Requests, H3521000 SSPP Requests, or H0011000 Unforseeable UG Cust Requests. After we exhaust the blanket funds,

we would use funds from other sources such as cancelled, or deferred, or reduced scoped projects. Attachment 2 of CA-IR-427 is a sample of how we transferred funds from blanket H0011000 Unforseeable UG Cust Requests and from a specific project H0001004 RPR Reconductor 7200 to fund other projects. Carryover projects are projects that were completed in a previous year but incurred charges in the current year primarily due to delayed subcontractor invoicing, reconciliation/settlement of charges, release of retention. These costs were not identified during the development of the original HELCO-WP-1401 and therefore were not included in the initial \$45,318,000 of plant addition for test year 2006.

HELCO identified in several IR responses reforecasted test year 2006 plant addition numbers for certain projects. The IR responses are:

CA-IR-180: Provided estimated plant addition dates as of August 25, 2006. Based on July 2006 Pillar data, identified projects with \pm \$100,000 difference from the original HELCO-WP-1401.

CA-IR-181: Identified projects with completion dates that either moved into the test year 2006 or out of the test year 2006 as of August 25, 2006.

CA-IR-185: Provided estimated plant addition dates as of August 25, 2006.

CA-IR-288: Provided a list of projects whose budgets were funded by monies transferred from three specific blanket projects as of August 30, 2006.

CA-IR-371: Identified updated plant addition forecasts for four specific projects.

CA-IR-372: Identified six specific projects that will not be plant added in 2006.

CA-IR-373: Confirmed that six specific projects no longer qualified as capital projects.

CA-IR-375: Identified updated plant addition forecasts for two specific projects and four blanket projects.

- CA-IR-426: Identified updated plant addition forecast for one specific project.
- CA-IR-431: Identified updated plant addition forecast for one specific project.
- CA-IR-447: Based on November 2006 Pillar data, identified projects with \pm \$100,000 difference from the original HELCO-WP-1401.
- CA-IR-498: Identified one specific project to be delayed to 2007.
- CA-IR-499: Identified same project as CA-IR-498 to be delayed to 2007.

HELCO-WP-1401 (UPDATED 12/1/06)

Hawaii Electric Light Company, Inc.
2006 PLANT ADDITIONS
UPDATES

	A	B	C	D	E	F	G	H	I	J	K
1	D-Meters	H1001000	PURCHASE NEW METER	156,429	467,713	467,713	0	536,818	0		18
2	D-Meters Total			156,429	467,713	467,713	0	536,818	0		
3	D-Poles	H0000444	Pole 12KV UG	-	121,726	121,726	0	-	0		
4	D-Poles	H0000700	Surge Protector Ph 2 1	-	250,000	250,000	250,000	0	250,000	0	
5	D-Poles	H0000705	Surge Protector Ph 3	-	420,373	420,373	0	0	420,373	0	
6	D-Poles	H0000803	RPM Pkt Kaula Rd	8,350	-	-	8,350	0	0	0	
7	D-Poles	H0000835	Pole 11 Regulators	6,280	-	-	6,280	0	0	0	
8	D-Poles	H0000929	Kaula Vacation Land Rd	72,072	-	-	72,072	0	0	0	
9	D-Poles	H0000933	Kaula Regulators	-	84,730	84,730	0	0	0	0	
10	D-Poles	H0001146	RPR Kona Palisades VG Ph 3	110,300	330,404	330,404	0	0	330,404	0	
11	D-Poles	H0001177	Pole Replacement	150,000	150,000	150,000	0	0	150,000	0	
12	D-Poles	H0001180	Replace Old Service Conduct	537	100,000	100,000	0	0	100,537	0	
13	D-Poles	H0001284	RPM Anod Pano-Wakea Rd	130,115	-	-	130,115	0	0	137,489	
14	D-Poles	H0001289	Mary Lau	23,877	-	-	23,877	0	0	143,905	
15	D-Poles	H0001301	Victoria Hunter	47,016	-	-	47,016	0	0	84,312	
16	D-Poles	H0001352	Polyspan Automation	-	189	189	0	0	0	0	
17	D-Poles	H0001358	Palisades Ph 4	-	62,862	62,862	0	0	0	0	
18	D-Poles	H0001363	Palisades Hub	-	29,181	29,181	0	0	0	0	
19	D-Poles	H0001366	Palisades Conn Ph 2	-	187,408	187,408	0	0	0	0	
20	D-Poles	H0001378	Home Conversion 1st	-	143,841	143,841	0	0	0	0	
21	D-Poles	H00011000	Underground UG Conn Req	1,207,232	1,207,232	1,207,232	0	0	1,207,232	0	
22	D-Poles	H1008000	POLE LINE REPL & RELOC	1,471,430	2,115,823	2,115,823	1,208,111	2,437,802	0	0	
23	D-Poles	H1070000	MINOR OTHER ON ADDITIONS	33,226	308,229	308,229	0	178,811	0	0	
24	D-Poles	H1013000	MINOR ON LINE CONVERSIONS	-	35,743	35,743	0	2,410	0	0	
25	D-Poles	H1015000	MINOR CABLE REPLACEMENT	36,816	188,738	188,738	0	70,447	0	0	
26	D-Poles	H1017000	MINOR UG EXTN BELOW 2000	1,420,044	1,178,411	1,178,411	846,551	1,750,142	0	0	
27	D-Poles	H0510000	SSPP Routers	-	103,277	103,277	0	465	0	0	
28	D-Poles	H4730000	OTHER UG ADDITIONS	9,176	3,401	3,401	0	76,421	0	0	
29	D-Poles Total			3,529,537	6,240,773	6,240,773	2,507,694	0	0	0	
30	D-Land			-	-	-	0	0	0	0	
31	D-Land Total			-	-	-	0	0	0	0	
32	D-ROW	H1008000	MINOR ROW SURVEY	-	5,906	5,906	0	13,048	0	0	
33	D-ROW Total			-	5,906	5,906	0	0	0	0	
34	D-Sub & Sub	H0000010	Battery Replacement	10,587	21,381	21,381	0	60,600	0	0	
35	D-Sub & Sub	H0000937	Kaula UFR & Bays	75,818	-	-	75,818	0	0	70,793	
36	D-Sub & Sub	H0001128	RPM WAIANA SUB	7,284	-	-	7,284	0	0	63,428	
37	D-Sub & Sub	H0001188	Palisades Sub Xline Upgrade	-	41,853	41,853	0	63,152	0	0	
38	D-Sub & Sub	H0001190	Underground Loadshed-Block 1	108,842	120,808	120,808	0	228,619	0	0	
39	D-Sub & Sub	H0001191	Underground Loadshed-Block 2	-	84,520	84,520	0	86,803	0	0	
40	D-Sub & Sub	H0001192	Underground Loadshed-Block 3	-	81,991	81,991	0	82,743	0	0	
41	D-Sub & Sub	H0001193	Underground Loadshed-Block 4	-	87,629	87,629	0	87,629	0	0	
42	D-Sub & Sub	H0001194	Underground Loadshed-Block 5	222,000	-	-	222,000	0	0	287,679	
43	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
44	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
45	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
46	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
47	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
48	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
49	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
50	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
51	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
52	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
53	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
54	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
55	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
56	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
57	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
58	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
59	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
60	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
61	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
62	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
63	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
64	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
65	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
66	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
67	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
68	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
69	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
70	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
71	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
72	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
73	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
74	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
75	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
76	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
77	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
78	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
79	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
80	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
81	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
82	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
83	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
84	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
85	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
86	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
87	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
88	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
89	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
90	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
91	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
92	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
93	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
94	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
95	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
96	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
97	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
98	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
99	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
100	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
101	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
102	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
103	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
104	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
105	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
106	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
107	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
108	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
109	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
110	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
111	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
112	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
113	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
114	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-	186,233	186,233	0	283,407	0	0	
115	D-Sub & Sub	H0001200	Palisades Sub Safety Mod	-							

HELCO-WP-1401 (UPDATED 12/1/06)

Hawaii Electric Light Company, Inc.
2006 PLANT ADDITIONS
UPDATES

	A	B	C	D	E	F	G	H	I	J	K
118	G-Fun	H5100000	ADMIN DEPT OFFICE FURNIT		18,772		18,772	0			
117	G-Fun Total			2,168	86,888		84,048	7827			
118	G-Info Sys	H0000188	Prod Dept PC Purchase		42,488		42,488	0		15,082	
119	G-Info Sys	H0000335	Energy Dept PC Purchase		17,892		17,892	0		10,641	
120	G-Info Sys	H0000482	HELCO Landfill		44,814		44,814	0		133,117	
121	G-Info Sys	H0000488	Computer Purchase-Admin		11,181		11,181	0		8,848	
122	G-Info Sys	H0000841	Customer Info System Repl	114				114			
123	G-Info Sys	H0001131	Distribution PC Purchases		88,847		88,847	0		2,503	
124	G-Info Sys	H0001148	Kanakahehu Operations Center Server			20,000	20,000	0		12,258	
125	G-Info Sys	H0001408	Equipment for EBT		80,000		80,000	0		7,871	
126	G-Info Sys	H0001416	Scanner Upgrade		3,254		3,254	0		2,867	
127	G-Info Sys	H5125000	ACCTG DEPT PC PURCHASE		8,748		8,748	0		12,000	
128	G-Info Sys	H5128000	ENGR DEPT PC PURCHASE		33,883		33,883	0		18,879	
129	G-Info Sys	H5129000	CUST SVC PC PURCHASE		23,842		23,842	0		3,288	
130	G-Info Sys Total			114	228,008	20,000	328,008	114			
131	G-S&I	H0000672	Main Oic Bldg Improvements		80,318			80,318	(1)		
132	G-S&I	H0000678	Security Building and F&I		150,000		150,000	0		180,000	
133	G-S&I	H0000682	Disposal Area Modify		30,000		30,000	0		20,847	
134	G-S&I	H0001171	Pave Kane Reservoir		83,000		83,000	0		83,000	
135	G-S&I	H0001172	Kane Fire Sprinkler System		258,000		258,000	0		820,000	
136	G-S&I	H0001173	Pave Waimea Parking Area		8,850		8,850	0		8,850	
137	G-S&I	H0001174	Pave Backyard Waimea		15,823		15,823	0		4,131	
138	G-S&I	H0001175	Canvass Production Warehouse		80,000		80,000	0			
139	G-S&I	H0001176	Enclosed Office Tail Shop		18,000		18,000	0		18,000	
140	G-S&I	H0001181	Waimea & Emergency Generator		80,000		80,000	0		80,000	
141	G-S&I	H0001182	Buildings & Structures Upgrade		100,000	(48,000)	51,000	0		20,000	
142	G-S&I	H0001350	30 day PCB Storage Area Hls		100,000			100,000			
143	G-S&I	H0001351	Technical Roof Extension		100,000	(100,000)		0			
144	G-S&I	H0001357	Kanakahehu Camera System Upgrade		22,273	(22,000)	273	0			
145	G-S&I	H0001412	Saline Office Remodeling		18,000			18,000		15,000	
146	G-S&I	H4800000	MAJOR GENERAL PLANT	28,825	31,810		81,435	0		43,408	
147	G-S&I Total			28,825	1,103,872	(181,000)	802,063	(150)18			
148	G-T&E	H0000229	PC Tools		5,381		5,381	0		5,381	
149	G-T&E	H0000295	Eng CADW Winstation Kane		16,218		16,218	0		25,777	
150	G-T&E	H0000298	Eng CADW Winstation Hls		33,883		33,883	0		80,744	
151	G-T&E	H0000333	Energy Dept Tools & Equip		8,708		8,708	0		37,4	
152	G-T&E	H0000532	A&E Program - Equip Purchase		13,417		13,417	0			
153	G-T&E	H0000615	Replace USB-Kalms		200,800		200,800	0			
154	G-T&E	H0000624	Field Service Handbooks		180,077		180,077	0			
155	G-T&E	H0001141	Cr Tools	9,718				9,718		9,718	
156	G-T&E	H0001197	G Tech Upgrade In FRAMAE		142,819			142,819			
157	G-T&E	H0001188	Wash Hl Sub-Trailer	20,344		17,000	43,344	0		43,328	
158	G-T&E	H0001228	PV Replacements		24,588	(24,588)		0		0	
159	G-T&E	H0001344	UPS Upgrd Hls Base Yang	2,118			2,118			40,887	
160	G-T&E	H0001347	Three phase recording voltmeter		31,418			31,418		31,380	
161	G-T&E	H0001348	Single phase recording voltmeter		23,880			23,880		43,854	
162	G-T&E	H0001349	Power Factor Test Set		44,832			44,832		45,472	
163	G-T&E	H0001354	mini mobile sub		51,323		51,323	0		50,813	
164	G-T&E	H0001384	Manitex (7) for Hls and Kanakahehu		186,834		186,834	0		87,086	
165	G-T&E	H0001385	Mini Shop Lm Press		20,843		20,843	0		28,787	
166	G-T&E	H0001403	Volts Tester		27,893			27,893			
167	G-T&E	H0001410	Electrical Heating Simulator		7,827		7,827	0			
168	G-T&E	H0001411	Respirator Program-Equip		4,472		4,472	0			
169	G-T&E	H0001415	Records Management		23,480		23,480	0		20,982	
170	G-T&E	H5000000	ACCTG DEPT TOOL & EQUIP		3,280		3,280	0		448	
171	G-T&E	H5000000	CUST SVC DEPT TOOL & EQUIP		17,880		17,880	0		12,258	
172	G-T&E	H5000000	ENGR DEPT TOOL & EQUIP	3,758	6,581		8,348	0		11,462	
173	G-T&E	H5000000	DISTR DEPT TOOL & EQUIP	104,528	288,747	14,000	387,275	0		348,814	
174	G-T&E	H5000000	ADMIN DEPT TOOL & EQUIP		11,181		11,181	0		2,705	
175	G-T&E Total			148,483	1,438,644	6,402	1,444,848	127,883			
176	P-Land	H0000655	Kanakahehu Land Reclaiming	1,841,720	133,943		1,875,703	0		1,887,108	
177	P-Land Total			1,841,720	133,943		1,875,703	0			
178	P-Other	H0000050	Landscape Tools & Equip		8,000		8,000	0		1,800	
179	P-Other	H0000509	CT-2 Corrosion Measurement (Q&M)		176,257	(170,257)		0			10
180	P-Other	H0000578	Security Patrol Van		250,000		250,000	0		213,414	
181	P-Other	H0000632	Shapman Kanakahehu Bay GHP	256,275				256,275		256,837	
182	P-Other	H0001158	CT-1 Low Smoke Fuel Nozzles (Q&M)		200,000	(200,000)		0			11
183	P-Other	H0001227	Customer Assistance Capital Projects		87,086			87,086			
184	P-Other	H0001258	Pier 3 Fuel Pipeline Repl	239,207			239,207	0		313,007	
185	P-Other	H0001348	Kanakahehu CT-2 Diesel Engine		33,643		33,643	0			5 - 1 - 2006
186	P-Other	H0001384	Kanakahehu Water Treatment Hill Replacement (Q&M)		25,000	(25,000)		0			12
187	P-Other	H0001384	Kanakahehu CT-2 Governor Controls		830,000		830,000	0		1,283,341	
188	P-Other	H3128000	Kanakahehu CT-4 Combustion Turbine		17,800		17,800	0		5 - 25 - 2004	
189	P-Other	H3184000	Kanakahehu CT-5 Combustion Turbine		17,800		17,800	0		5 - 30 - 2004	
190	P-Other	DHE40000	Kanakahehu CT-2 & 3 Safety Barriers		100,000		100,000	0		(934,518)	
191	P-Other	DHE40000	Kanakahehu Acoustic System		30,000		30,000	0			
192	P-Other	DHE40000	Kanakahehu CT-2 Black Start		250,000		250,000	0			
193	P-Other	DHE40000	Kanakahehu Fire Alarm Connection		85,000		85,000	0			
194	P-Other	DHE40000	Kanakahehu CT-4 CO2 System Upgrade		30,000		30,000	0			
195	P-Other	H5001000	PROD DEPT TOOL & EQUIP	8,428	25,718		34,146	0		81,898	
196	P-Other Total			501,807	1,407,802	184,743	1,770,889	323,361			
197	P-Stream	H0000020	Hll Plant Dam Breaker		600,000	700,000	700,000	0		700,000	
198	P-Stream	H0000612	Pump Station Controls Upgrade	3,788	200,000	(180,000)	103,788	0		82,120	
199	P-Stream	H0000888	Predictive Maint Program		187,800		187,800	0		87,500	
200	P-Stream	H0001056	Pump Service Water System	2,283				2,283		2,283	
201	P-Stream	H0001083	Pump Bay Tank Modification	86,830			86,830	0		86,830	
202	P-Stream	H0001084	Pump Fan Enclosure		50,000	(50,000)		0			
203	P-Stream	H0001083	Shapman Controls-F in Wiring	278,438	380,000			658,438			
204	P-Stream	H0001085	Pump S&C System	84,130			84,130	0		154,464	
205	P-Stream	H0001102	Shapman P&G Station & Pumps	81,181	250,000		331,181	0		311,338	
206	P-Stream	H0001135	Shapman Water Motor & Fan	63,225			63,225	0		86,784	
207	P-Stream	H0001147	Shapman Pump Station		100,000			100,000			8 - 14 - 2006
208	P-Stream	H0001148	Shapman Solid State Rectifier	178,018	100,000		278,018	0		288,587	
209	P-Stream	H0001151	Shapman Operator Enclosures		100,000		100,000	0			
210	P-Stream	H0001156	Hll & Asset Optimization		208,378		208,378	0		208,378	
211	P-Stream	H0001157	Hll & Asset Optimization		208,378		208,378	0		208,378	
212	P-Stream	H0001158	Shp 3 Asset Optimization	210	148,750		148,960	0		148,960	
213	P-Stream	H0001180	Shp 4 Asset Optimization	215	148,750		148,965	0		148,965	
214	P-Stream	H0001183	Pump Bm Turb Governor Replac		200,000	50,000	250,000	0			
215	P-Stream	H0001184	Pump Asset Optimization		150,000			150,000			
216	P-Stream	H0001330	Hll & Battery Bank		40,000	40,000	0		47,981		
217	P-Stream	H0001387	Hll & Hydrogen Dryer and Control Panel (Q&M)		100,000	(100,000)		0			
218	P-Stream	H0001388	Pipeline Monitor		30,000		30,000	0			13
219	P-Stream	H0001380	Hll & Bm Water/Wast/Generating Rebuilding		800,000	177,257	1,077,257	0			
220	P-Stream	H0001381	Hll & Bm Condenser Rebuilding/Rebuilding		250,000		250,000	0			
221	P-Stream	H0001382	Hll & Bm VFD Upgrades (Q&M)		150,000	(150,000)		0			14
222	P-Stream	H0001383	Shapman Solid Fuel Pumps (cancel)		600,000	(600,000)		0			
223	P-Stream	H0001433	Shapman BFW Motors		170,000		170,000	0		170,000	
224	P-Stream	DHE40000	Hll & Bm Blowers		80,000	50,000	130,000	0			5
225	P-Stream	DHE40000	Pump Drainage		70,000		70,000	0			
226	P-Stream	H0100000	POWER PLANT ADDITIONS	39,803	70,455		110,258	0		180,772	
227	P-Stream	H1010000	MISC ENVIRON & Q&M PROJECTS	28,862	61,880		90,742	0		80,378	
228	P-Stream	H1020000	POWER STATION ADDITIONS	21,812	57,848		79,660	0		121,094	
229	P-Stream	H3180000	KANAKAHEHU 18MW BT ADDITION		1,041,000	28,000	1,069,000	0			
230	P-Stream Total			846,742	6,187,032	(704,743)	5,945,199	288,367			

HELCO-WP-1401 (UPDATED 12/1/06)

	A	B	C	D	E	F	G	H	I	J	K
	Function	Project No.	Project Description	CWIP (2010)	FY09 Budget	Actual	Permit Addition	CWIP (2010)	Original Projects	2009 Budget	2009 Actual
221	T	H0000447	Peters Substation	-	1,352,282	1,352,282	0	-	-	-	24
222	T	H0000448	Palmer Pump Sub	-	136,149	136,149	0	-	-	-	25
223	T	H0000449	Walpole Pump Sub	-	1,002,482	1,002,482	0	-	1,002,482	-	26
224	T	H0000450	Walpole Pump B&V	-	36,543	36,543	0	-	36,543	-	27
225	T	H0000451	Walpole Pump 12KV UG	-	84,483	84,483	0	-	87,877	-	28
226	T	H0000452	Walpole West 19.0KV UG	-	110,637	110,637	0	-	147,000	-	29
227	T	H0000454	WFO Switching Station	201,058	110,637	201,058	0	-	231,858	-	30
228	T	H0000455	Auto B&V UG Conversion	183,815	-	-	-	18,281	-	-	31
229	T	H0000457	Substation Fencing	854	120,000	120,854	0	-	120,854	-	32
230	T	H0000722	Queen K-Rail-Peters B&V	-	808,436	1,133,233	0	-	1,820,837	-	33
231	T	H0000784	Exeter Road Resurfacing B&V	-	118,368	118,368	0	-	-	-	34
232	T	H0000801	Waltham Hwy Imp	7,728	-	-	-	7,728	67,647	-	35
233	T	H0000819	Fume Sm Sts - C&P Switcher	43,831	117,368	161,198	0	-	43,832	-	36
234	T	H0001004	RPR Reconducting 7200	-	2,040,879	-	-	204,078	-	-	37
235	T	H0001047	Waltham-Dur Reson. 7200 Line	23,581	548,151	-	-	811,712	-	-	38
236	T	H0001051	C&P K&A-LEA-C&P CONDUCTOR-800M	30,189	-	-	30,188	0	128,451	-	39
237	T	H0001104	Straw Maintenance ST	52,388	-	-	-	-	-	-	40
238	T	H0001187	Dist Relay Upgrd-Line 6800	-	64,236	64,236	0	-	64,236	-	41
239	T	H0001188	Dist Relay Upgrd-Purple	-	35,184	35,184	0	-	41,371	-	42
240	T	H0001189	Dist Relay Upgrd-Purple	-	51,407	51,407	0	-	51,600	-	43
241	T	H0000008	Apollo B&V Line Upgrade	-	-	62,000	-	-	-	-	44
242	T	H0001203	Apollo Ramona Substation	-	134,870	134,870	0	-	-	-	45
243	T	H0001204	Apollo Ramona to S PT MHV	-	233,658	233,658	0	-	-	-	46
244	T	H0001205	Apollo B&CADA at Ramona	-	62,484	62,484	0	-	-	-	47
245	T	H0001207	Apollo Ramona Relay Upgrade	-	42,255	42,255	0	-	77,432	-	48
246	T	H0001208	Apollo Ramona Relay Upgrade	-	42,255	42,255	0	-	50,824	-	49
247	T	H0001331	13 B&V Switchers in Cam Ridge	108,504	-	120,000	-	228,504	772,815	-	50
248	T	H0001353	KPF Switch Upgrade	-	47,819	-	-	47,818	46,834	-	51
249	T	H0001355	B&C&C Improvements	-	50,000	50,000	0	-	-	-	52
250	T	H0001371	Waltham 7200 Switcher Rpt	-	78,186	78,186	0	-	88,739	-	53
251	T	H0001372	Waltham 7200 Switcher Rpt	-	78,186	78,186	0	-	133,188	-	54
252	T	H0001374	Van SS 13KV Set Imp	-	97,051	97,051	0	-	-	-	55
253	T	H0001376	Van Line 2 Travel Rpt	-	380,788	380,788	0	-	-	-	56
254	T	H0001380	Waltham Station Service	-	118,286	118,286	0	-	167,123	-	57
255	T	H1011000	MINOR TRANS LINE ADDITIONS	-	32,564	32,564	0	-	77,878	-	58
256	T	H1014000	MINOR TRANS LINE ADDITIONS	-	27,263	27,263	0	-	10,248	-	59
257	T	Total		671,037	7,750,448	1,335,233	8,459,710	298,1049	-	-	60
258	T	Land	H0001381	HEP Switching Station Site	-	272,000	272,000	0	-	-	61
259	T	Land	H0001382	Ramona Switching Station Site	-	143,000	143,000	0	-	-	62
260	T	Land	Palmer Substation Lot	-	-	129,122	129,122	0	-	-	63
270	T	Land Total		-	415,000	129,122	544,122	0	-	-	64
271	V	H0000033	Heavy Trucks	-	488,700	488,700	0	-	832,715	-	65
272	V	H0000548	Medium Trucks	-	420,000	420,000	0	-	483,244	-	66
273	V	H0000549	Extreme & Light Trucks	-	433,800	433,800	0	-	412,886	-	67
274	V	Total		-	1,342,500	1,342,500	0	-	-	-	68
275	T	Subtotal of Original MELCO-WP-1481 Projects		11,418,724	42,793,021	1,286,757	45,218,620	101,30801	37,635,494	-	69
276	T	NEW PROJECTS ²⁹ (Funded by H0007000, H3521000, H0011000 & other sources)									70
277	T										71
278	T										72
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Hawaii Electric Light Company, Inc. 2006 PLANT ADDITIONS UPDATES

	A	B	C	D	E	F	G	H	I	J	K
	Project Number	Project Name	Project Description	OWP#	YTD Budget	Actual Budget	Original Project Cost	Updated 2000 Price Tag	Original Project Cost	Updated 2000 Price Tag	Original Project Cost
344	Distribution - UG	H0001470	Hualalai Ranch LWS & S/D					524,773			
345	Distribution - UG	H0001471	Hualalai Ranch LWS & S/D					524,773			
346	Distribution - UG	H0001477	Puuhi Estates S/D Phase 2					421,826		9	1
347	Distribution - UG	H0001455	Waialeale Bch Villas Ph II					87,456		10	31
348											
349											
350	Communications	H0001454	Kaunaloa B.S. Base Station					18,702			
351	Distribution - OH	H0001340	Ram, Jkt					43,476		2	27
352	Distribution - OH	H0001490	Vulcano Golf & Country Club					53,273		9	5
353	Distribution - OH	H0001497	RPL Glenview					36,738			
354	Distribution - OH	H0001502	Honolulu Ridge Inc.					22,445			
355	Distribution - OH	H0001503	Ginger, Douglas & Eileen					28,736		10	23
356	Distribution - OH	H0001504	Merritt, Jon & Melissa					30,860			
357	Distribution - OH	H0001512	Charles L. Eric					37,035		11	13
358	Distribution - OH	H0001513	Tin O'Sullivan					60,918			
359	Distribution - OH	H0001518	Owen, Gregory L.					34,886			
360	Distribution - OH	H0001517	Karl Nohrstrom					33,847			
361	Distribution - OH	H0001518	Island Chiropractic Dental					63,367			
362	Distribution - OH	H0001519	Kahala Place PUD					40,000			
363	Distribution - OH	H0001520	RPL Secretary Kamohana B.					26,947			
364	Distribution - UG	H0001474	C.O. Waiheke Comfort Shm					13,814			
365	Distribution - UG	H0001284	Puuhi Ranch Subd					183,308		2	8
366	Distribution - UG	H0001417	Honolulu Subd					62,000			
367	Distribution - UG	H0001418	Kaunaloa B.S. Waiheke					484,474			
368	Distribution - UG	H0001472	Hualalai Ranch LWS Subd					170,101			
369	Distribution - UG	H0001474	Hualalai Heights S/D					51,044		5	18
370	Distribution - UG	H0001475	Waiheke					256,231		7	25
371	Distribution - UG	H0001492	Ala Heights Unit 2 Phase 4					21,844		9	1
372	Distribution - UG	H0001464	Manoa Valley S/D Ph 2					388,294			
373	Distribution - UG	H0001497	Volcano Golf - Unit V-UG					86,481			
374	Distribution - UG	H0001498	Maunaloa Hill R. Washford					35,085		9	24
375	Distribution - UG	H0001498	Waimanalo Parkside PUD					61,850		9	22
376	Distribution - UG	H0001499	Hua Hui S/D					22,748		9	5
377	Distribution - UG	H0001500	Ala Heights Unit 2 Ph 2 S/D					78,102		10	27
378	Distribution - UG	H0001506	Kaliwa Subdivision					25,248			
379	Distribution - UG	H0001509	Honolulu S/D					74,000		9	11
380	Distribution - UG	H0001514	Sugarcane Lane S/D					26,000			
381	Distribution - UG	H0001515	Farmly S/D					31,000		10	20
382	Distribution - UG	H0001520	Maunaloa Subd					28,539			
383	Distribution - UG	H0001525	Liquid B. Kaula S/D					78,000			
384	Distribution - UG	H0001537	Ranch B. Puukia S/D					54,786			
385	Distribution - UG	H0001539	Kaunaloa Hill Unit #6					57,210			
386	Distribution - UG	H0001541	Tampa Trail Ballpark					47,260			
387	Distribution - UG	H0001542	Tampa Trail Ballpark					28,367			
388	Distribution - OH	H0001538	Ranch B. Puukia OH					50,241			
389	General Plant	H0001511	Kona Cargill					10,248			
390	Production - Non-Steam	H0001153	C.T. Governor Control Upgrade					202,526		8	11
391	Production - Non-Steam	H0001466	Maunaloa Subd					28,539			
392	Production - Non-Steam	H0001466	Maunaloa Subd					28,539			
393	Production - Steam	H0001446	Puna Vapour Driftage					70,000		10	18
394	Tools & Equipment	H0001184	Battery Compression Tools					30,063			
395	Tools & Equipment	H0001346	AGD Program - Equip Purchase					12,678			
396	Tools & Equipment	H0001493	THVA UPS Upd Hilo Base Yard					26,470			
397	Tools & Equipment	H0001526	SFS Analytic					34,441			
398	Tools & Equipment	H0001527	SFS Gas Reducer					22,801			
399	Tools & Equipment	H0001526	SAFETY TOOLS					48,814			
400	Tools & Equipment	H0001531	Receptor Program - S-Web					18,078			
401	Tools & Equipment	H0001430	High-Gain Decoding Station					4,450			
402	Transmission - Sub	H0000704	Substation S&P Replacement					56,780		11	16
403	Transmission - Sub	H0001472	CG-700 Replacement					80,309		9	19
404	Transmission - Sub	H0001479	Lehighville Transformer					107,000			
405		H0001521	SEMA S/D					42,088			
406		H0001522	PLANKA RANCH SUBDIVISION					183,000			
407		H0001523	KING SUBDIVISION					42,781			
408		H0001524	QOMA PLANTATION					63,368			
409											
410											
411	Subtotal of New Projects (sum of cells D95, E102, G45, & I48)							9,271,338			
412											
413											
414	CARRYOVER PROJECTS										
415											
416											
417											
418											
419	Communications	H0000848	Kaunaloa Bch UFR & Supp					1,484		11	4
420	Distribution - OH	H0001106	Kaunaloa Business Park					2,250		11	1
421	Distribution - OH	H0000542	Honolulu Ph I					42,741		8	2
422	Distribution - OH	H0000560	McClure Properties S/D					66		8	30
423	Distribution - OH	H0000553	S&P Unit 438 Owners					18,433		13	25
424	Distribution - OH	H0000786	Reyn Hamilton Sub Upgrade					1183		8	25
425	Distribution - OH	H0001022	RPL Hualalai Camp					631		8	17
426	Distribution - OH	H0001117	Hualalai Ph - Offsite Imp					159		11	8
427	Distribution - OH	H0001134	HY DEV LLC-KAAPAHU					3,180		8	2
428	Distribution - OH	H0001272	S&P T24-New Zealand					28,844		12	21
429	Distribution - OH	H0001300	Al Hui					773		12	17
430	Distribution - OH	H0001305	Ala Heights Unit 2 Ph 2 OH					40,180		8	26
431	Distribution - OH	H0001367	S&P R28 - T-14					37,882		10	21
432	Distribution - OH	H0001312	S&P R50 - Mathes					3,721		12	15
433	Distribution - OH	H0001341	Thomas Woods					10,488		12	5
434	Distribution - OH	H0001343	S&P R38 - BUGRUE					1,740		12	22
435	Distribution - OH	H0001000	CHRIS TIGHE R MORRIS					44		8	21
436	Distribution - UG	H0000346	Main Office Building 2					354		9	11
437	Distribution - UG	H0000548	RPL Kane (Pleasures)					40,839		12	21
438	Distribution - UG	H0001058	KUHO S/D Ph III					11331		8	19
439	Distribution - UG	H0001071	Awehohohu Xtra Fan Add					82		12	27
440	Distribution - UG	H0001081	Kaunaloa Heights S/D					800		9	25
441	Distribution - UG	H0001112	HUALALAI PARCEL 1 & S/D					1331		9	29
442	Distribution - UG	H0001171	RPL Ph Liliuokalani B.					5,048		12	29
443	Distribution - UG	H0001232	Manuapou S/D PH1A					82		11	1
444	Distribution - UG	H0001244	Kaunaloa 12V UG					83,472		13	21
445	Distribution - UG	H0001296	Manuapou					863		8	15
446	Distribution - UG	H0001296	Auto Ph II Increment 2 S/D					37,150		10	24
447	Distribution - UG	H0001306	Ala Heights Unit 2 Ph 2 UG					40,838		10	21
448	Distribution - UG	H0001318	Ala Heights Unit 2 Ph 2 S/D					70,148		12	23
449	Distribution - UG	H0001327	Hakapuu Plantation Vg UG					4467		12	30
450	Distribution - UG	H0001336	Hakapuu Plantation Vg UG					50,728		11	15
451	Distribution - UG	H0001337	Auto Ph III Increment 2 S/D					30,435		10	24
452	Distribution - UG	H0001345	WAIKOLA BEACH VILLAS PH I					55,294		13	29
453	General Plant	H0000974	Main Office AC Improvement					22,419		3	18
454	General Plant	H0000983	Hualalai Substation Lot					64,398		12	12
455	General Plant	H0000481	Kona Research Ene Bldg					50,813		13	13
456	General Plant	H0001140	SCADA System Upgrade					9,333		9	15

**Hawaii Electric Light Company, Inc.
2006 PLANT ADDITIONS
UPDATES**

[illegible]

Hawaii Electric Light Company
Capital Budget - 2006
Additional Request To Transfer Funds

Project Funds Transferred From: **UM-430 H0011000**
Capital Project Title: **Unforseeable UG Cust Req**

<u>Request Number</u>	<u>Transfer To Project Number</u>	<u>Capital Project Title</u>	<u>Transfer From Project Number</u>	<u>Amount</u>	<u>Remaining Balance</u>	<u>AR SETUP</u>
			Initial Budget =		1,892,106	
21	H0001329	Waikoloa Beach Marriot	H0011000	35,540	1,856,566	02/06/06
24	RRedma12/H0001438	Keahole Heights Ph II S/D	H0011000	32,000	1,824,566	02/09/06
28	RBalte23/H0001442	Golf Villas-LE	H0011000	150,041	1,674,525	03/01/06
29	MMathe06/H0001419	Parker Well No. 1	H0011000	30,000	1,644,525	03/01/06
34	H0001420	Sunset Ridge Ph 3 Unit 3	H0011000	43,000	1,601,525	03/13/06
35	RBalte18/H0001444	Lokahi Makai S/D-Phase I	H0011000	228,345	1,373,180	03/14/06
36	RBalte19/H0001445	Lokahi Makai S/D-Phase II	H0011000	152,888	1,220,292	03/14/06
37	RBalte26/H0001443	KOYO USA 3	H0011000	78,555	1,141,737	03/16/06
38	RRedma07/H0001450	Hapuu Kapania S/D	H0011000	77,000	1,064,737	03/16/06
41	RBalte24/H0001453	Kulalani at Mauna Lani	H0011000	126,670	938,067	03/20/06
54	RBalte20/H0001462	Alii Cove	H0011000	173,833	764,234	03/30/06
55	RRatif22/H0001461	Prince Kuhio Plaza	H0011000	38,379	725,855	03/30/06
61	RRedma13/H0001455	Waikoloa Beach Villas Ph II	H0011000	55,000	670,855	04/04/06
62	KIkeda07/H0001470	Hualalai Parcel 10B & 13 S/D	H0011000	393,341	277,514	04/12/06
63	KIkeda08/H0001471	Hainoa Villas Parcel 7B	H0011000	46,162	231,352	04/12/06
65	KIkeda06/H0001477	Pualani Estates Subdn Phase 2	H0011000	244,630	-13,278	04/19/06

Hawaii Electric Light Company
Capital Budget - 2006
Additional Request To Transfer Funds

Project Funds Transferred From: BT-320 H0001004
Capital Component Title: Keamuku-Waimea Recon 7200 Line

<u>Request Number</u>	<u>Transfer To Project Number</u>	<u>Capital Project Title</u>	<u>Transfer From Project Number</u>	<u>Amount</u>	<u>Remaining Balance</u>	<u>AR SETUP</u>
				Initial Budget =	2,043,391	
88	H0001418	Kikaha @ Wehilani	H0001004	525,000	1,518,391	06/22/06
91	MMathe12/H0001495	Makana Kai @ Wehilani	H0001004	141,000	1,377,391	07/05/06
92	MMathe14/H0001496	Waimea Parkside PUD	H0001004	52,000	1,325,391	07/05/06
93	BMatsu16/H0001497	RPL Shoemaker	H0001004	36,738	1,288,653	07/25/06
95	Ryamat11/H0001499	Hua'aina S/D	H0001004	26,000	1,262,653	07/25/06
96	Kikeda19/H0001500	Alii Heights Unit 2 Ph 5 S/D	H0001004	38,050	1,224,603	07/25/06
98	BMatsu12/H0001502	Honolii Ridge Inc. 1	H0001004	22,684	1,201,919	07/25/06
109	DNAKAT05/H0001503	Geiger, Dwight & Eileen	H0001004	29,238	1,172,681	08/08/06
110	DNAKAT06/H0001504	Miyasuda, Jon & Melissa	H0001004	33,814	1,138,867	08/10/06
133	MMATHE06/H0001536	Ranch @ Puakea OH	H0001004	54,000	1,084,867	10/12/06
134	MMATHE07/H0001537	Ranch @ Puakea UG	H0001004	64,000	1,020,867	10/12/06
135	RYAMAT18/H0001535	Upland @ Kaohe S/D	H0001004	49,000	971,867	10/18/06
136	RYAMAT19	SSPP 936 Lawler	H0001004	17,000	954,867	10/18/06
137	RYAMAT20	SSPP 917 Meredith	H0001004	30,000	924,867	10/18/06
138	DDEMIC09	Waikoloa Park Comfort Sta.	H0001004	83,000	841,867	10/24/06

CA-IR-428

Ref: HELCO-WP-1401 & Responses to CA-IR-180, CA-IR-181 & CA-IR-182 (Plant Additions).

The referenced responses identify various revisions (e.g., completion dates, project cost estimates, etc.) to HELCO's original forecast of test year plant additions. Referring to the response to part (a) above, please provide a breakdown of the updated construction cost estimate, by project, between HELCO in-house labor (including labor hours), outside contract labor, material costs, etc. [If this information is not readily available in the format requested, please provide HELCO's best estimate of in-house direct labor costs (amount and hours, if available) included in each project cost estimate.]

HELCO Response:

Projects identified in CA-IR-180 and CA-IR-181 that represented an increased cost to the 2006 Plant Addition have been broken down by various expense elements in Attachment 1 of this response. Project totals are consistent with the values presented in CA-IR-180 and CA-IR-181, which were based on July 2006's Pillar data.

Hawaii Electric Light Company, Inc.
PROJECT COST BREAKDOWN

Proj No	Project Description	Expense Element	Hours	CWIP Amount	Actual Hours	Actual Amount	Forecast Hours	Forecast Amount	Total Hours	Total Amount
H0000672	Main Ofc Bldg Improvements	Matl-Issues/Purchases						45,000		45,000
H0000672	Main Ofc Bldg Improvements	Stores						5,315		5,315
H0000672	Total							50,315		50,315
H0000698	Predictive Maint Program	Outside Svcs-General						187,500		187,500
H0000698	Total							187,500		187,500
H0000700	Sunrise Ridge Ph 2	AFUDC-Debt				457				457
H0000700	Sunrise Ridge Ph 2	AFUDC-Equity				1,004				1,004
H0000700	Sunrise Ridge Ph 2	Corp Admin Expense				108				108
H0000700	Sunrise Ridge Ph 2	Cust Installations				1,619				1,619
H0000700	Sunrise Ridge Ph 2	Employee Benefits				428				428
H0000700	Sunrise Ridge Ph 2	Energy Delivery				641				641
H0000700	Sunrise Ridge Ph 2	HELCO Labor			60	1,510			60	1,510
H0000700	Sunrise Ridge Ph 2	Labor True-up				235				235
H0000700	Sunrise Ridge Ph 2	Matl-Issues/Purchases				-				-
H0000700	Sunrise Ridge Ph 2	Non-Productive Wages				209				209
H0000700	Sunrise Ridge Ph 2	Outside Svcs-Constr				-		250,000		250,000
H0000700	Sunrise Ridge Ph 2	Payroll Taxes				150				150
H0000700	Sunrise Ridge Ph 2	Stores				-				-
H0000700	Sunrise Ridge Ph 2	Vehicles				-				-
H0000700	Total				60	6,380		250,000	60	256,360
H0000803	RPL PRI Kealoala Rd.	AFUDC-Debt		623		130				753
H0000803	RPL PRI Kealoala Rd.	AFUDC-Equity		1,362		285				1,647
H0000803	RPL PRI Kealoala Rd.	Corp Admin Expense		182				2,786		2,968
H0000803	RPL PRI Kealoala Rd.	Cust Installations		854				2,049		2,903
H0000803	RPL PRI Kealoala Rd.	Employee Benefits		522				1,619		2,141
H0000803	RPL PRI Kealoala Rd.	Energy Delivery		2,337				21,271		23,608
H0000803	RPL PRI Kealoala Rd.	HELCO Labor	105	2,797			775	26,850	879	29,647
H0000803	RPL PRI Kealoala Rd.	Labor True-up		48				-		48
H0000803	RPL PRI Kealoala Rd.	Matl-Issues/Purchases						14,047		14,047
H0000803	RPL PRI Kealoala Rd.	Non-Productive Wages		376				3,159		3,535
H0000803	RPL PRI Kealoala Rd.	Outside Svcs-Constr						25,497		25,497
H0000803	RPL PRI Kealoala Rd.	Payroll Taxes		249				2,307		2,556
H0000803	Total		105	9,350		415	775	99,685	879	109,350
H0000955	Mauna Lani Res II	Cust Installations		2,952						2,952
H0000955	Mauna Lani Res II	Corp Admin Expense		773						773
H0000955	Mauna Lani Res II	Employee Benefits		1,764						1,764
H0000955	Mauna Lani Res II	Energy Delivery		8,401						8,401
H0000955	Mauna Lani Res II	HELCO Labor	386	9,798					386	9,798
H0000955	Mauna Lani Res II	Labor True-up		3,583						3,583
H0000955	Mauna Lani Res II	Matl-Issues/Purchases		12,617						12,617
H0000955	Mauna Lani Res II	Non-Productive Wages		1,566						1,566
H0000955	Mauna Lani Res II	Payroll Taxes		1,188						1,188
H0000955	Mauna Lani Res II	Stores								-
H0000955	Total		386	42,642		-	-	-	386	42,642
H0001063	Kan to Shipman Fiber	AFUDC-Debt		1,523		2,185				3,708
H0001063	Kan to Shipman Fiber	AFUDC-Equity		3,788		4,811				8,599
H0001063	Kan to Shipman Fiber	Corp Admin Expense		499		1,928		935		3,362
H0001063	Kan to Shipman Fiber	Cust Installations		477				-		477
H0001063	Kan to Shipman Fiber	Employee Benefits		1,095		4,469		2,038		7,603
H0001063	Kan to Shipman Fiber	Energy Delivery		2,788		8,195		5,615		16,599
H0001063	Kan to Shipman Fiber	HELCO Labor	240	7,175	466	13,731	242	7,124	948	28,030
H0001063	Kan to Shipman Fiber	Labor True-up		114		1,283		-		1,397
H0001063	Kan to Shipman Fiber	Matl-Issues/Purchases		55,524		19,982		16,879		92,385
H0001063	Kan to Shipman Fiber	Matl-Purchasing Card				164		-		164
H0001063	Kan to Shipman Fiber	Non-Productive Wages		973		1,997		1,024		3,994
H0001063	Kan to Shipman Fiber	Outside Svcs-General		30,066		32,599		-		62,665
H0001063	Kan to Shipman Fiber	Payroll Taxes		675		1,256		649		2,579
H0001063	Kan to Shipman Fiber	Stores				-		419		419
H0001063	Total		240	104,699	466	92,601	242	34,682	948	231,982
H0001146	RPR Kona Palisades UG Ph 3	AFUDC-Debt		181		3,500				3,681
H0001146	RPR Kona Palisades UG Ph 3	AFUDC-Equity		449		7,705				8,155
H0001146	RPR Kona Palisades UG Ph 3	Corp Admin Expense		164		176				339
H0001146	RPR Kona Palisades UG Ph 3	Cust Installations		60		-				60
H0001146	RPR Kona Palisades UG Ph 3	Employee Benefits		589		461				1,050
H0001146	RPR Kona Palisades UG Ph 3	Energy Delivery		2,786		1,913				4,699
H0001146	RPR Kona Palisades UG Ph 3	HELCO Labor	80	2,466	49	1,640			129	4,106
H0001146	RPR Kona Palisades UG Ph 3	Labor True-up		(61)		497				436
H0001146	RPR Kona Palisades UG Ph 3	Matl-Issues/Purchases				24,821				24,821
H0001146	RPR Kona Palisades UG Ph 3	Non-Productive Wages		325		205				530
H0001146	RPR Kona Palisades UG Ph 3	Outside Svcs-Constr				283,078		2,310		285,388
H0001146	RPR Kona Palisades UG Ph 3	Outside Svcs-General		111,127		(111,128)				(1)
H0001146	RPR Kona Palisades UG Ph 3	Payroll Taxes		214		181				394
H0001146	RPR Kona Palisades UG Ph 3	Stores				-				-
H0001146	Total		80	118,300	49	213,048	-	2,310	129	333,658

Hawaii Electric Light Company, Inc.
PROJECT COST BREAKDOWN

Proj No	Project Description	Expense Element	Hours	CWIP Amount	Actual Hours	Actual Amount	Forecast Hours	Forecast Amount	Total Hours	Total Amount
H0001193	Undervolt Loadshed-Block 4	AFUDC-Debt		330		724				1,054
H0001193	Undervolt Loadshed-Block 4	AFUDC-Equity		602		1,513				2,114
H0001193	Undervolt Loadshed-Block 4	Corp Admin Expense		753		1,047				1,800
H0001193	Undervolt Loadshed-Block 4	Employee Benefits		3,293		3,313				6,606
H0001193	Undervolt Loadshed-Block 4	Energy Delivery		13,007		13,212				26,220
H0001193	Undervolt Loadshed-Block 4	Intercompany Charges				1,175				1,175
H0001193	Undervolt Loadshed-Block 4	HELCO Labor	355	10,278	352	10,225			708	20,504
H0001193	Undervolt Loadshed-Block 4	Labor True-up		2,932		1,982				4,893
H0001193	Undervolt Loadshed-Block 4	Matl-Issues/Purchases		188,055		(169,721)				18,334
H0001193	Undervolt Loadshed-Block 4	Matl-Purchasing Card		234		66				300
H0001193	Undervolt Loadshed-Block 4	Meals & Entertainment				56				56
H0001193	Undervolt Loadshed-Block 4	Non-Productive Wages		1,442		1,463				2,906
H0001193	Undervolt Loadshed-Block 4	Outside Svcs-General				89				89
H0001193	Undervolt Loadshed-Block 4	Payroll Taxes		1,173		1,055				2,228
H0001193	Undervolt Loadshed-Block 4	Stores				-				-
H0001193	Total		355	222,098	352	(133,821)	-	-	708	88,278
H0001228	PV Replacements	Matl-Issues/Purchases						22,000		22,000
H0001228	PV Replacements	Stores						2,598		2,598
H0001228	Total							24,598		24,598
H0001272	SSPP 753-Granahan	Corp Admin Expense		190						190
H0001272	SSPP 753-Granahan	Cust Installations		2,492						2,492
H0001272	SSPP 753-Granahan	Employee Benefits		751						751
H0001272	SSPP 753-Granahan	Energy Delivery		1,251						1,251
H0001272	SSPP 753-Granahan	HELCO Labor	93	2,311						2,311
H0001272	SSPP 753-Granahan	Labor True-up		588						588
H0001272	SSPP 753-Granahan	Matl-Issues/Purchases		4,747						4,747
H0001272	SSPP 753-Granahan	Non-Productive Wages		377						377
H0001272	SSPP 753-Granahan	Outside Svcs-Constr		15,600						15,600
H0001272	SSPP 753-Granahan	Outside Svcs-General								
H0001272	SSPP 753-Granahan	Payroll Taxes		256						256
H0001272	Total		93	28,663	-	-	-	-	-	28,663
H0001347	Three Phase Record VoltMeter	Matl-Issues/Purchases				9,145				9,145
H0001347	Three Phase Record VoltMeter	Stores								
H0001347	Total					9,145				9,145
H0001348	Single Phase Record Voltmeter	Matl-Issues/Purchases				43,554				43,554
H0001348	Single Phase Record Voltmeter	Stores								
H0001348	Total					43,554				43,554
H0001349	Power Factor Test Set	Matl-Issues/Purchases				45,472				45,472
H0001349	Total					45,472				45,472
H0001350	Hilo 30 day PCB Storage	Matl-Issues/Purchases								
H0001350	Hilo 30 day PCB Storage	Outside Svcs-Constr						100,000		100,000
H0001350	Total							100,000		100,000
H0001353	KPF Switch Upgrade	AFUDC-Debt						651		651
H0001353	KPF Switch Upgrade	Corp Admin Expense						644		644
H0001353	KPF Switch Upgrade	Employee Benefits						1,442		1,442
H0001353	KPF Switch Upgrade	Energy Delivery						5,513		5,513
H0001353	KPF Switch Upgrade	HELCO Labor					150	5,225		5,225
H0001353	KPF Switch Upgrade	Matl-Issues/Purchases						30,333		30,333
H0001353	KPF Switch Upgrade	Non-Productive Wages						645		645
H0001353	KPF Switch Upgrade	Outside Svcs-General						-		-
H0001353	KPF Switch Upgrade	Payroll Taxes						435		435
H0001353	KPF Switch Upgrade	Stores						3,582		3,582
H0001353	Total						150	48,469		48,469
H1001000	PURCHASE NEW KWH METERS	Corp Admin Expense				6,846		3,511		10,358
H1001000	PURCHASE NEW KWH METERS	Employee Benefits				16,543		7,966		24,409
H1001000	PURCHASE NEW KWH METERS	Energy Delivery				65,926		30,081		96,007
H1001000	PURCHASE NEW KWH METERS	HELCO Labor			1,731	50,664	819	24,223		74,887
H1001000	PURCHASE NEW KWH METERS	Labor True-up				7,526		-		7,526
H1001000	PURCHASE NEW KWH METERS	Matl-Issues/Purchases				214,020		145,459		359,479
H1001000	PURCHASE NEW KWH METERS	Matl-Purchasing Card				724		-		724
H1001000	PURCHASE NEW KWH METERS	Meals & Entertainment				1,666		-		1,666
H1001000	PURCHASE NEW KWH METERS	Non-Productive Wages				7,378		3,520		10,898
H1001000	PURCHASE NEW KWH METERS	Outside Svcs-General				4,785		-		4,785
H1001000	PURCHASE NEW KWH METERS	Payroll Taxes				4,891		2,018		6,909
H1001000	PURCHASE NEW KWH METERS	Stores				-		17,179		17,179
H1001000	PURCHASE NEW KWH METERS	Vehicles				-		-		-
H1001000	Total				1,731	380,969	819	233,857		614,826

CA-IR-429

Ref: HELCO-WP-1401 & Response to CA-IR-182 (Plant Additions).

In response to CA-IR-182, HELCO provided PIAs for 18 of the 21 projects set forth on HELCO-WP-1401 in excess of \$500,000. Pages 34-38 of Attachment 1 represent the PIA for Project H0000853, AMR-Turtle Meters & Eqpt. Please provide a copy of the "Turtle meter study and economic analysis" referenced in the "justification" section of the PIA (Attachment 1, page 36).

HELCO Response:

See Attachments 1 and 2 of this response.

The AMR turtle project was undertaken primarily to address the growth of customers on the Big Island (especially West Hawaii). Installation of the turtle meters has addressed the need for additional resources to read meters, maintenance of meter reader vehicles traversing abnormal terrain, and safety of our meter reading personnel. As discussed in HELCO T-7, page 13, line 19 through page 16, line 16, as a result of installing the turtle meters, HELCO has deferred adding new meter reader positions in West Hawaii. The savings classified as hard savings – labor savings due to not having to read the turtle meters, is included in the test year estimates. The savings classified as soft savings – vehicle maintenance, reduction in rereads, etc, are hard to quantify and are indirectly reflected in the test year estimates.



Hawaii Electric Light Company, Inc.

Facilitated Revenue Collections Project

Automatic Meter Reading Technologies Review
For HELCO

Dated: April 24, 2003

By: HELCO FRC Task Force

I. Executive Summary

An array of Automatic Meter Reading technologies were reviewed and evaluated. The Hunt Technologies TS1 system is recommended to accommodate growth in new customer meters and defer increase of meter reading expenses. This system does not support all of the features available with some of the other AMR systems, but it is the most economical for HELCO's current strategies. The uncertainty of future strategies such as time of use rates and water heater control schemes makes investment in the more sophisticated AMR systems risky and is not recommended at this time. It will take approximately 8 months from the receipt of approval to expend funds to placing the system in-service.

II. Purpose of Study

Research available automatic meter reading technologies to validate whether the Hunt Technologies TS1 Turtle system that HELCO deployed in February 2001 is still the right automatic meter reading (AMR) technology for HELCO.

III. Power Line Carrier Technology (PLC)

It is generally believed that a low-density, rural utility like HELCO benefits most from a power line carrier AMR system because communication infrastructure does not need to be built. Therefore, the focus of the research was on power line carrier (PLC) systems with other notable technologies mentioned. The Gridwatch.com directory of metering companies that provide AMR technology was used as a guide for research. Forty-five companies were researched on the Internet and the more applicable ones were contacted.

The main U.S. vendors of PLC AMR technologies were Hunt Technologies, Distributed Controls Systems and Cannon Technologies. A description of each PLC product is provided below. Table 1 provides a comparison of functions that the systems can provide and Table 2 provides an estimate of cost for each of the three systems.

A. Hunt Technologies, Inc., Turtle System

1. TS1 One-Way System

TS1 is Hunt's original one-way power line carrier system. Its patented low frequency ultra narrow bandwidth PLC technology can reliably travel through long distances of all kinds of distribution devices. However, the resulting transmission is slow taking anywhere from 14 hours to 27 hours to get one read depending on how much information you want to get back from the transmitter. The TS1 system consists of the transmitters at the meter, the receiver at the substation and the Turtle server, which calls the substation receiver on a daily basis to download meter data. Because the Turtle system works on continuous communication through assigned frequencies (no polling), the receivers are limited to a maximum of 2,880 meter transmitters.

The server software currently operates on a Microsoft Access database platform. Hunt is currently working on a SQL version to make it compatible with their TS2 Command Center software.

Single-phase transmitters are available under-glass on several common meters that HELCO uses. With exception of a new GE meter on the market, the three-phase transmitter is an external device that requires the meter to have the option of exporting contact closures (KYZ) for pulse counts. The external device also can only do one register so multi-register metering requires more external units. This setup can be expensive since the meter needs to be upgraded in functionality and additional wiring and mounting is required at the site. TS1 also requires transmitters to be programmed before installation and reprogramming requires a field visit.

TS1 is the low cost AMR PLC system with low cost, easily installed substation equipment. But it also has the least amount of functionality and a very slow rate of data transfer. Hunt Technologies plans to keep selling and supporting the TS1 system because they feel many utilities require only the one-way functions that TS1 offers and do not need to pay the high cost of a two-way system.

2. HELCO TS1 Pilot Evaluation

HELCO conducted a pilot evaluation of the TS1 system starting in February 2001 and has since expanded to a second receiver and approximately 500 meters in both Hawaiian Acres and Keauhou View Estates. The pilot showed that TS1 provides reliable and accurate reads, even when used at the 34.5 kV level, which allowed collection of meters from several substations on the sub-transmission line. The server software is easy to use to manage the basic functions of meter additions and meter readings. The following is a summary of the issues that came up:

- After two years in service, a transmitter was found to be 5 kWh's less than the dial reading. This was attributed to the low usage by the home, which Hunt admits can trick the transmitter to miss a few disk spins. Diskless meters are available with Turtle modules that would eliminate the difference.
- The lag time in getting reads was a slight concern since it was set at 27 hours to obtain outage counts. An outage of the circuit could also interrupt the packet and result in missing data for two 27-hour periods.
- The system was never tested to see if harmonic distortion would interfere with the communication of the system enough to affect readings. Some HELCO circuits like the Kapoho substation do have high harmonic distortion.
- Outage management was very limited in the software. The outage counts could not be reset unless done in the field with the handheld programmer. The software was more for after-the-fact statistics.
- Tampering could be observed with outage counts because we had a daily history that could indicate de-energization of the meters. No tampering caught.
- Programming of meters was easy to do in the shop before deployment. However, programmed meters are assigned to a specific receiver so as the number of receivers grow, the shop will have to carefully manage the inventory of programmed meters.
- No remote programming could make mass changes very inconvenient. For the most part, there is no need to do mass reprogramming.

A financial analysis conducted by HELCO in March 2002 showed that even the low cost of the Turtle system was not sufficient economically to justify the use of traditional meter reading in all areas. However, when the analysis was done for hard-to-read areas with all soft-savings included, the payback period was short enough to move ahead with completing the Hawaiian Acres subdivision.

3. TS2 Two-Way System

TS2 is Hunt's new two-way power line carrier system. The system has only been commercial for three months but beta testing has been going on for over a year. Similar to the TS1 PLC technology, the end points are constantly in communication with the substation equipment as opposed to other systems that require polling. TS2 requires no programming of endpoints since each one has a unique ID that the two-way system can detect and remotely program. Data is transmitted to the receiver where the usage is stored and processed. The TS2 substation equipment requires signal injection control equipment and a properly sized capacitor bank. With engineering design and installation, the setup is significantly more expensive than the TS1 system. TS2 endpoints are also slightly more expensive than the TS1 endpoints but additional functionality like TOU have been added. TS2 uses SQL for its server software called Command Center and is accessed by users via a regular web browser. No part of the TS2 system is compatible with any part of the TS1 system, although, the server software will eventually be compatible. Currently, the three-phase unit is not available for TS2. Similar to their TS1 system, Hunt offers an inexpensive pilot program for their TS2 system.

4. Vendor Contact

Briston Jones, Account Executive, came to HELCO on January 14, 2003 to present the Turtle system. Ed Garcia and Burel Lane were contacted by phone for more technical information. Hunt offers lower pricing if a utility of any size submits a plan that commits a significant proportion of their total meters to the Turtle system.

B. Distributed Control Systems, Inc. (DCSI), TWACS System

1. TWACS System Description

The Two-Way Automatic Communications System (TWACS) is DCSI's power line carrier system. The system is rich with features but expensive. The TWACS system sends signals along the utility's 60 Hz frequency and had been able to reach 85 miles in distance with less than 10 seconds delay time in response (compared to all day on the Turtle system). The equipment at the substation polls the meters for data instead of constantly receiving information on different frequencies as the Turtle system does so there is no limit to the number of endpoints on one substation receiver. The substation equipment can be installed at stations up to 46 kV and consists of a receiver, an injection control, and a properly sized three phase modulating transformer. The control equipment shorts the low side of the modulating transformer to inject a signal on the power line that

transmits requests to the meter endpoint. The substation equipment installation is required for the system to work (no one-way option) and requires engineering and construction to install all the equipment. With the two-way capabilities, the TWACS system can offer disconnect/reconnect functions, load management control, capacitor bank control, load shedding, on demand reads, tamper protection with resetable outage counts and loading data to help with distribution engineering (the first four items require purchasing additional equipment).

TWACS endpoints require no programming of endpoints since each one has a unique ID that the two-way system can detect and remotely program each unit. The single-phase unit is available underglass in many of the common meters. It has 29 registers that include kWh, block demand, blink counts, voltage monitor, and 1-hour load profile (24 of those registers). A time sync signal is sent from the substation equipment every 15 minutes to keep the correct time in the units without a battery. Although TWACS claims they can provide TOU metering, we would need to use the 1-hour load profile data and build a report to compile it into the proper buckets. It does not collect the data in the proper TOU buckets to easily get readings on each billing cycle.

TWACS has a nice solution for polyphase and transformer rated (CT/PT) meters. DCSI has worked with certain electronic meter manufacturers to build an interface with the meter so that their TWACS unit acts like a modem. The meter's registers and memory are used to accumulate and store data and TWACS is able to grab and transmit this data back to the receiver. The module is also able to collect and transmit load profile data. DCSI did note that their TWACS endpoint has not been reliable when sending signals through metering PT's so alternatives may be required for transformer rated meters with PT's.

The TWACS server software operates on an Oracle database. Each port on the server can communicate with 16 substations via phone line or ethernet. The software allows users to make requests and perform two-way operations on specific meter endpoints or as groups, which then transmit to the substation equipment for operation. The cost of the server software can be very high as DCSI must charge investor-owned utilities based on the total number of meters possible that the utility can put on the system. In addition, HELCO would need to obtain the Oracle database directly from Oracle along with a new dedicated server. Coop utilities get much better pricing.

The comparative costs of the TWACS system are shown on Table 2. Good pricing information was not obtained because DCSI was reluctant to provide quotes without working with us to determine our needs and developing a program. They preferred to give a per-unit cost that was based on a large implementation. Because the endpoint is relatively low priced, the system is not the most expensive. The expensive common equipment can be spread out among all the meters. DCSI believes that AMR systems like the TWACS system cannot be justified based on monthly meter readings. Other features that the two-way system offers must be factored in.

2. Vendor Contact

Matt Dhillon, Marketing Director, came to HELCO on March 11, 2003 to present the TWACS system. DCSI has sold many systems to coop utilities and a few to investor-owned utilities. Matt feels the coop utilities have taken it further because they are one big

family where as the investor-owned utilities have infighting among departments that prevent the overall company from taking advantage of all the features that the TWACS system offers. DCSI does not have a pilot program deal for the TWACS system because the initial investment is high so Matt feels the utility needs to commit to the product from the beginning.

C. Cannon Technologies, Inc., EMETCON

1. EMETCON System Description

Cannon Technologies offers the EMETCON two-way power line carrier system. Their system operates with high frequency (12 kHz), low power signals that result in fast response time but limited distance range. The EMETCON system also has many features available to take advantage of the two-way system because Cannon, like DCSI, believes that their AMR system cannot be justified with only monthly meter readings. The EMETCON substation equipment is half the cost of the TWACS equipment and consists of a carrier control unit and properly sized capacitors to inject the signal that can be installed on 15 kV or 34.5 kV systems. The system is a master/slave polling system so the endpoints do not send information to the substation equipment unless requested to do so. Similar to the TWACS system, the substation equipment installation is required for the system to work (no one-way option) and requires engineering and construction to install all the equipment. EMETCON can offer disconnect/reconnect functions, load management control, regulator control, capacitor bank control, generator set monitoring, voltage monitoring, on demand reads, tamper protection and outage management. The system has microRTU's available and even has the capability to interface with the ESCA system to provide information and receive control commands.

The EMETCON system has reached distances of 70 miles on long, untapped power lines. Noisy circuits and taps to the circuit can limit the distance of the PLC system to 10-20 miles. The system also requires line conditioning to pass grounded-Y capacitor banks on the lines. As a result of these limitations, Cannon also sells repeaters to extend the reach of the PLC communication and devices to allow the signal to pass by grounded-Y capacitor banks.

Despite the lower substation equipment cost, the EMETCON endpoints are high priced compared to the TWACS system. Cannon sells the meters with their module installed. The single-phase unit has a lot of functionality including 15 minute load profile and time of use registers. The polyphase and transformer rated meter option is a module that acts like a modem similar to the TWACS system. The meter stores the information and the endpoint is able to extract what it needs to send back to the master. The 3-phase unit however cannot extract the load profile data from the electronic meter and must receive KYZ output contacts from the meter to store load profile information.

Cannon calls its server software Yukon and it works on either an SQL or Oracle database. It is modular software with many elaborate features that can be added to the basic meter reading and load control functions. Even the base software is quite expensive. One of the add-on modules is the paging software that gives it the capability to page devices like disconnect/reconnect.

The comparative costs between AMR systems are shown on Table 2. The EMETCON system is the most expensive, mainly because the endpoint is expensive.

2. Vendor Contact

Ed Cannon, President, provided information over the telephone on March 19, 2003. Joel Cannon and Ben Wallace conducted a web presentation on March 26, 2003. Joe Childs, Western Regional Sales Manager, provided follow-up pricing and information. Cannon offers a trial period, which defers a lot of the upfront cost for the system. After 6 months, HELCO would have to decide to pay the remaining balance or return the equipment.

D. Other PLC

1. Comverge Technologies, Inc. and Quadlogic Controls Corporation use power line carrier technology. However it is used in shorter distances like inside a building to communicate with meters and load control devices. Data flows to and from a collector for the building where it communicates with the main server using a phone line or internet connection.
2. Sistron International uses satellite 2-way communication (supposedly full coverage) to provide access to commercial meters including the KV and Transdata meter that HELCO uses. In residential applications, their meters would communicate via power line carrier to an ORBCOMM device by the distribution transformer, which would then communicate via satellite to the server. Data is compatible with MV-90. It can take multiple readings per day, perform load shedding functions, and disconnect/reconnect service. Also, it is capable of TOU and DSM applications.

IV. Other Notable AMR Technologies

A. Radio Frequency

1. Itron – Itron is the leader in the meter reading industry and HELCO has many devices from Itron including the handheld metering devices and MV-90. Itron does not have power line carrier technology but they do have wireless solutions. They have fixed network systems where a collector of data needs to be installed in the vicinity to wirelessly get data and eventually transmit it back to the server. They also have drive by mobile type collection devices. These are usually best for densely populated areas where lots of meters can offset the common costs. One possible application that Itron offers is their radio frequency ERT modules that are installed on standard meters and enables meter readers to read from over 1,000 feet away. Although meter readers still need to do the reading, it speeds up their route by targeting the hard to reach meters along the route without a large common collector investment. It also avoids having to enter gated properties that have high-end customers who don't want strangers coming in. HELCO and MECO bought this functionality on their new Itron handheld meter reading devices to continue reading the ERT modules they have installed for high-end customers.

B. Paging

1. BLP Technologies, Inc. – Uses the regular commercial paging network (one way) to remote disconnect/reconnect meters and perform load control. This system requires the FLEX protocol and vendor is checking if it is available on this island. There are several other vendors of paging devices that may be a more affordable solution for some of the two-way functions desired.

C. Phone Line or Cell Phone

1. CellNet Data Systems (A Schlumberger Company) – Uses regular commercial cell phone network to communicate with meter. Meter can provide demand readings, TOU, load profile and outage management.
2. Nertec Design Inc. – Sells a socket adapter that can register kWh, TOU, load profile interval data and has additional channels for water and gas meter information. Uses residential telephone line or regular commercial cell phone network or an Internet connection to communicate back to the server.

V. Other HE AMR Initiatives

A. HECO

Several years ago, HECO looked at Itron solutions (fixed and mobile wireless) but it turned out to be more expensive than could be justified. HECO is still actively looking into all the different AMR technologies, one of which is cutting-edge PLC technology that can provide broadband Internet access. The technology and the companies that market it are still very new.

B. MECO

MECO is similarly researching AMR technologies with some focus on power line carriers. They are in the evaluation stage and looking to do a pilot. No budget has been created to do a pilot yet.

VI. Analysis of PLC AMR System for HELCO

HELCO has the challenge of using its limited resources to serve low-density customers that are long distances from the baseyard and difficult to access. At this time and in the near future, reducing meter reading costs or avoiding increases in meter reading costs seem to be the main priority for a HELCO AMR project.

Table 2 shows that the Hunt Technology TS1 Turtle system is the least cost by far. TS1 has the best chance of being financially justified to replace manual meter reading, especially in high cost meter reading areas. Based on HELCO's pilot program, TS1 can meet the basic monthly meter

reading function and also provide indication of tampering. However, TS1 has limitations that prevent the investment from being used further. Besides the issues mentioned in the TS1 pilot evaluation (section III.A.2), the features that other PLC systems have to offer but TS1 doesn't include: no two-way communication functionality, no time of use capability, no load profile and no polyphase/tsf rated meter modem interface. The following reviews the feasibility and necessity of having these features at HELCO.

A. Two-Way Systems

Two-way systems are more than double the cost of the TS1 system and the return on investment for this capability will likely be low. All the two-way system vendors will admit that their system is not economical if monthly meter reading is all that it is used for. For the most part, the extra two-way features require extra resources to manage.

Two-way features:

- **Load management** – HELCO has not implemented a load management program that would control water heaters and air conditioners of homes. Besides the extra resources to manage the program, additional switch devices at each meter must still be purchased to make the functionality work. Because it requires consent from the customer and the participants may not be grouped where you invested in the two-way equipment, other technology like the paging system may be a better option. The downside of paging is the lack of feedback to see if the switches are still connected and actually cutting load.
- **Disconnect/Reconnect** – This feature is generally desired by Revenue Accounting to reduce the field visits necessary to do disconnects and reconnects. All systems, even TS1, can do a virtual disconnect although HELCO's policy is to do a hard disconnect. To do a hard disconnect/reconnect, an additional socket unit must be purchased (appx \$300). Putting one of these devices at every home would not be cost effective. For the limited amount of customers that do disconnect and reconnect often, especially in hard-to-read areas, the large investment of a two way system would not be justified. Again, other technology like the paging system may be a better option.
- **On Demand Reads** – This function could be used for same day disconnects or for possible customer inquiries.
- **Load shedding** – Even if an interface to the EMS system was developed, this function will likely be too slow to help a system emergency. The intent is to be able to drop loads like water heaters and air conditioners instead of cutting total power to homes and businesses. This has similar issues as load management.
- **Distribution engineering** – In a well-setup system, engineering would have a lot more detailed circuit load information available to them. Location of loads, demand profiles and voltage information could provide information for distribution planning. However, for a system to be an effective, resources must be expended to record and track the location of every meter for load or voltage information to mean anything.

B. Time of Use

HELCO has a handful of commercial customers (mainly pumps) that are allowed to be on a time of use (TOU) rate. Residents are not offered the TOU option although HELCO is proposing residential TOU for Oahu. Currently, all of the TOU accounts at HELCO are

downloaded monthly either manually or by phone line to obtain the 15 minute load profile for backup calculation and insurance of compliance.

The targeted areas for PLC AMR systems are made up of mostly residential customers. Time of use has not been very popular among residential customers at other utilities and so it is likely that large grouping of customers off a PLC receiver substation would participate if HELCO were to offer it. Hunt Technologies and DCSI (TWACS) both indicate that their single-phase product does not have TOU capability because there is little demand for TOU and history shows little success for TOU offerings to residents. Therefore, this function should be less of a critical factor in our evaluation to select an AMR system.

C. Load Profile

HELCO collects 15-minute load profile information from large customers to provide account management services and to check time of use billing. HELCO also collected load profile information for class load studies. Other than the class load study, HELCO has no need or no resources to observe the load profile for residential customers. This functionality should be considered a low priority as resources concentrate on the larger customers. The exception may eventually be net metering homes but special metering and telephone lines are probably the more cost effective solution. TS1 offers daily instantaneous peaks with graphical reports for each meter and could be offered to customers if requested.

D. Polyphase and Transformer Rated Meters

The TWACS and EMETCON systems provide a nice solution for electronic polyphase or transformer rated (CT/PT) meters. Their modules act like a modem and grab data directly from the meter's register. These work with specific meters that interfaces have been built with and cost a little more (module cost and additional meter cost was not obtained). The Turtle system uses an external unit and requires the meter to be upgraded to put out KYZ contact closures to communicate pulses to the external Turtle unit. As mentioned in the Turtle description, the external unit can only register one value, no load profile can be collected or transmitted, and the TS1 version does not have TOU capability. Turtle's setup works with any electronic meter but requires labor to wire up and therefore could be more expensive than the TWACS and EMETCON solution.

Overall, the endpoint cost for polyphase and transformer rated meters is expensive and would make the financial justification of AMR even more unlikely. In addition, these meters tend to be in urban areas where it is easy to read. In terms of numbers, these type of installations in targeted residential areas should be small and should not be a high priority item. Despite less functionality, the Turtle system can get the main meter reading information of kWh and fixed block kW demand. We also have the present phone/modem technology that we are currently using for large customers loads to download interval load profile data and reads.

VII. Conclusions and Recommendation

This technology review has shown that no single AMR technology meets all of HELCO's automated meter reading needs. These needs include:

- facilitated revenue collections;
- reducing costs of remote high-cost meter reading routes;
- improved outage detection and management;
- better meter tampering detection tools;
- added-value services to key commercial accounts;
- distribution engineering data collection;
- provision for possible future TOU or other innovative rate designs.

Rather, HELCO should maintain a mix of AMR solutions that best fit these needs. In remote, high-cost meter read routes, reducing our meter reading costs (or avoiding additional meter reading costs) and thereby improving the efficiency of meter reading resources are key objectives. In such areas, these objectives are best met with a power-line carrier system, specifically the Hunt Technologies TS1 system. The TS1 system has the best technology fit and is also the most cost-effective solution when compared with radio frequency or telecommunication systems. The financial analysis done in March 2002 and confirmed by the attached April 2003 update shows there is a reasonable payback time in certain hard-to-read areas. In addition to monthly kWh readings, TS1 also provides outage counts and history as a tool to detect tampering.

Based on present day costs, full implementation of the TS1 system on all of HELCO's customer meters is not economically feasible. For residential service, manual meter reading is still the most cost-effective means of revenue collection in urban, sub-urban, and accessible semi-rural areas of our service territory. For commercial and industrial accounts, the more expensive endpoint AMR costs further enhances the economic advantage of manual reading.

However, there are other objectives besides cost reduction (or cost avoidance) that encourage HELCO to consider AMR in residential applications. Developers of high-end subdivisions may find added value in AMR because, by eliminating much of the physical presence of utility personnel, it enhances the privacy, hence the exclusivity, of the subdivision for potential buyers. The economics of AMR in such applications is not a key factor because the developer would be required to contribute to the cost of implementing the AMR system.

It is recommended to develop a five-year plan to install TS1 endpoints in the high-cost meter read routes where cost feasibility can be shown. This effort should be done in conjunction with a re-alignment of meter reading routes to maximum the efficiency of the manually-read routes. This effort would support an important objective to defer hiring a new meter reading position. The five-year plan would include installing the TS1 endpoints at a rate equal to the growth rate in customer counts, which is estimated at approximately 1,000 per year. The initial short-term plan (for 2003), is to install approximately 1,000 TS1 endpoints by December 31, 2003 in a West Hawaii location, where customer growth is the greatest.

Radio-frequency AMR systems are not cost-effective, and should not be implemented at the present time, because HELCO's service territory does have sufficient high-density meter reading areas that can offset the high fixed costs of these systems.

Currently, HELCO requires relatively simple, one-way AMR functions at large commercial accounts. For value-added services to key commercial accounts, such as pulse data acquisition for customer load profiles, telephone downloads of metering data to either a PCMAP or MV90 database remains the best solution. For those few accounts with complex communications needs, such as distributed generation sites, paging systems should be utilized.

As more sophisticated meter-reading applications arise in the future, other cost-effective AMR solutions can be implemented. For simple two-way functions, such as residential load-management programs, the two-way TS2 system could be installed at selected substations and work with the same software database as TS1.

More complex two-way functions are beyond the capabilities of simple PLC systems. These include disconnect/reconnect functions, capacitor bank control, load shedding, on-demand reads, tamper protection with resettable outage counts, and transformer loading data collection for distribution engineering. In these applications, advanced two-way PLC or paging systems can be cost-effective.

Table 1 – Comparison of Features – PLC AMR Technologies

	Hunt Tech TS1	Hunt Tech TS2	DCSI TWACS	Cannon Tech EMETCON
Basic Functions				
Capacity	2,880	9,000	No Limit	No Limit
kWh	Yes	Yes	Yes	Yes
2 way comm and functions	No	Yes	Yes	Yes
Export to CIS	Yes	Yes	Yes	Yes
Accommodate Net Metering	No	No	Yes	Yes
Tampering Notification	Yes	Yes	Yes	Yes
Outage Mgmt Tools	Yes	Yes	Yes	Yes
Commercial Metering				
Demand (fixed block)	1 ph – No 3 ph – Yes	Yes	Yes	Yes
Demand Reset	1 ph – No 3 ph – Yes	Yes	Yes	Yes
Polyphase	Yes	Yes	Yes	Yes
Multiple Registers (kVAR, in/out, etc.)	No Need extra unit	No Need extra unit	Yes	Yes
Transformer Rated Metering				
Solutions for Meters with PT's	Yes	Yes	No	Info Not Available
Solutions for Meters without PT's	Yes	Yes	Yes	Yes
Special Metering				
15 Minute Load Profile	No	No	1 ph – 1 hour 3 ph - Yes	Yes
Time of Use	No	Yes	No Must calc off load profile	Yes
Remote Clock Sync or Reset	N/A	Yes (in rcvr)	Yes	Info Not Available
Alarms (e.g. low battery, self chk)	N/A	N/A	N/A	Info Not Available

Table 2 – Comparison of Cost – PLC AMR Technologies

	Hunt Tech TS1	Hunt Tech TS2	DCSI TWACS	Cannon Tech EMETCON
Software				
Server Software	\$7,500	\$7,500	\$30,000	\$25,000 base
Database License	MS ACCESS – no extra charge Future SQL – already own	SQL – already own server license	\$1000 (assume all on one machine)	SQL – already own server license Oracle option
Other devices	HH - \$2,000	HH - \$3500	N/A	Tester - \$7,500
Installation Support	\$1,000	\$7,500	\$7,500	\$7,500
Total Common Cost	Pilot discount \$10,500	Offer 40% pilot discount \$11,100	\$42,500	\$40,000 Pilot offer temp reduces upfront
Maintenance Cost Per Year	\$3,000	\$3,000	\$5,000	20% of S/W \$5,000
Substation Equipment				
Equipment from vendor	\$5,000	\$25,000 Non-pilot cost	\$30,000	\$13,500
Downline Eqpmt	N/A	N/A	N/A	Repeater \$5,600 Blocking \$550
Additional Items HELCO has to buy	None	Caps = \$5,000 Stock=\$3,000 Cab = \$2,000	Tsf = \$10,000 Stock=\$3,000 Cab = \$2,000	Caps = \$5,000 Stock=\$3,000 Cab = \$2,000
Estimated Installation Cost	Install \$2,500	Design=\$8,000 CSA=\$5,000 Install=\$12,000	Design=\$8,000 CSA=\$8,000 Install=\$12,000	Design=\$8,000 CSA=\$5,000 Install=\$12,000
Total Substation Cost	\$7,500	\$60,000	\$73,000	\$48,500 (no repeaters)
Endpoint Cost in Addition to a Regular Meter Cost				
Single phase meter	\$55-65	\$85 (non-pilot)	\$75	\$155 (includes meter)
Three phase meter	\$120	?	?	\$475 (incl mtr)
Programming time	\$7.08 (1/12 hr)	N/A	N/A	N/A
Disc/Recon Device	N/A	?	\$300	\$375 (includes meter)
Customer Count				
Avg per Substation Receiver Locations	1,330	1,330	1,330	1,330
Total Endpoints – Initial Target	5,000	5,000	5,000	5,000
Per Endpoint Cost (all single phase)	\$74.82	\$132.33	\$138.39	\$169.47



Hawaii Electric Light Company, Inc.

Facilitated Revenue Collections Project

Three-Year TURTLE Implementation Plan Covering the years 2003 - 2005

Dated: May 30, 2003
By: HELCO FRC Task Force

Introduction

This document is a follow-up to the taskforce's recommendation of April 24, 2003 to implement and install 5,000 Hunt Technologies TURTLE meters over a five-year period. Under the direction of the Corporate Sponsor, Warren Lee, the Taskforce revised the time period of implementation to a three-year period. The total number of TURTLE meters to be installed remains the same at 5,000 meters. The installations will occur as follows:

1. In the year 2003 the Taskforce will install a minimum of 1,000 TURTLE meters.
2. In the year 2004 the Taskforce will install a minimum of 2,000 TURTLE meters.
3. In the year 2005 the Taskforce will install the remaining of the TURTLE meters, for a total of 5,000 over the three-year period.

The taskforce considered several factors in determining the areas where installations are recommended to occur. These factors are listed below:

- Revenue Accounting and Technical Division personnel recommendations
- Economic analysis (Cost – Benefit and Investment Payback)
- Districts where customer growth is impacting meter reading labor resources
- Difficult terrain and driving time of route
- Employee safety
- Vehicle maintenance costs

Although all of the above factors were considered, the taskforce strived to make certain that all of the recommended areas for installation of Turtle meters stood up to the economic analysis test. In all but one of the selected areas, the economic analysis overwhelmingly supports the taskforce's recommendations. In one area, while the economic analysis is not as overwhelming as the other areas, it is still recommended as part of the three-year implementation plan when considering other factors such as difficult terrain, vehicle wear and tear, and employee safety. Specific dollar impacts of these factors could not be quantified and as such could not be added to the economic analysis. Though not quantifiable, the taskforce feels that these factors were significant enough to recommend this area as part of the implementation plan. The following special consideration was given to this area:

The area is a mountainous area on the slope of Hualalai. Part of the area is known by the local name of Kaloko and the other part of the area is along the mauka sections of Palani Road. Both of these areas are connected to the Huehue Substation. The Kaloko area has steep roads, which are mainly unpaved with rocky debris and potholes. This area is also often covered in fog. During rainy weather, the roads become very muddy and slick. This causes the vehicles to slip and slide. The steepness of these roads makes for possibly uncontrollable vehicle slides, which can cause the vehicle to leave the roadway and collide with elements of the surrounding terrain.

The Palani Road section of this area requires the meter readers to enter and exit the very busy Palani Road numerous times. Often they'll need to reverse onto the highway from small driveways. The traffic on Palani Road has increased greatly over the years and these entry and exits to the highway become more and more difficult and dangerous as Kona grows.

The taskforce felt that with all of these various conditions, there was a higher risk that one of our vehicles could be involved in a serious accident. Serious injuries could occur to the driver and or the

public. The taskforce felt that the liability the company could face from an incident of this kind would probably exceed the cost of TURTLE implementation in this area. Limiting the company's exposure to this type of incident is of greater importance in this instance.

These same conditions also contribute to higher vehicle maintenance. The taskforce considered these costs as being substantial but were unable to quantify the dollar amount for the economic analysis. The reason for this is that the vehicles used on this route are also used on other routes so specific maintenance costs per route could not be broken out and an island wide average was used in the analysis.

Implementation Plan

2003

For 2003 the taskforce recommends that TURTLE meters be installed in the areas listed below:

• Hawaiian Ocean View Estates Subdivision	836 meters
• Hawaiian Ocean View Ranchos Subdivision	170 meters
	<hr/>
2003 Total	1006 meters

The selected areas are the furthest meter routes from the Kailua baseyard. These areas also require an additional person for the readings. (Kona District has three meter reader positions. A fourth position, a Field Representative, assists reading meters for this route.) Both subdivisions are also served by a single substation (Kapua) which minimizes substation costs. In choosing these areas, the taskforce address several of its determining factors including the economic analysis, which is attached as Attachment "A".

2004 & 2005

For 2004 and 2005 the taskforce recommends that TURTLE meters be installed in portions of the meter reading routes listed below:

West Hawaii District

• Kapua Substation routes (Sub. equip. installed in 2003)	489 meters
• Kealia Substation Meter reading routes	704 meters
• Captain Cook Substation meter reading routes	1615 meters
• Huehue Substation meter reading routes	899 meters
	<hr/>
West Hawaii Sub-Total	3555 meters

East Hawaii District

• Fern Acres Subdivision	356 meters
• Puna meter routes 6180 and 7182	131 meters
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East Hawaii Sub-Total	487 meters
	<hr/>
2004-2005 Total	4042 meters

The installations for 2004 and 2005 will also be largely done in West Hawaii. The major factor contributing to this decision was that it would have the greatest positive effect when all of the factors referred to above were considered. The selected areas in West Hawaii are mainly the hardest to read areas where access to the individual sites is difficult. In most cases, grouped with these areas are easier to read areas, which comprise the remainder of the meter reading routes. This will allow for re-designing of the meter reading routes and thus freeing up more time for existing staff to read the other areas of the district and lessening the amount of time the additional position is needed to read meters. The areas selected to have TURTLE units installed are not in specific subdivisions but are along certain meter reading routes. Therefore, the taskforce grouped the installations by substations. As with the installations recommended for 2003, the taskforce considered the economic analysis for each of the selected areas. These analyses are attached as Attachments "B","C" and "D".

The East Hawaii installations are located in the Puna district in areas where the majority of the roads are unpaved and where access to the meters is difficult due to locked gates, long driveways and guard animals. This is especially true for the Fern Acres subdivision. Again, the taskforce looked at the factors mentioned above and although the financial analysis did not fully support the East Hawaii selections, the taskforce felt that like Hawaiian Acres, this is a good selection for the TURTLE system to be implemented in. The other areas selected are located in the more remote areas of East Hawaii. These areas also have similar conditions to that of Fern Acres. They also have longer commuting times based on their remoteness. As with one of the Kona selections there were factors that the taskforce could not quantify into dollar values for the financial analysis. Factors such as wear and tear to the vehicles and affects on employee moral could not be put into black and white. Like Kona, vehicles are used for more than a single route and the additional maintenance costs for the selected areas could not be quantified. As was done in the Kona areas, an island wide average vehicle maintenance cost was used. The moral factor was bought to light through conversations with the employees. The moral issue, although not one of the original factors the taskforce considered in its selections, was one of the factors used in the East Hawaii selections. The taskforce felt that improving the working conditions for employees was a valid consideration in the East Hawaii selections. The financial analysis for Fern Acres is attached as attachment "E".

Summary

In summary, the taskforce reviewed areas around the Big Island where the implementation of AMR technology would provide the greatest benefit to the company and the customer. The taskforce looked at several factors when considering the different sites. Economic analysis for most of the selected sites overwhelmingly supports the taskforce's recommendations. For those sites where the economic analysis was not as overwhelmingly supportive, the taskforce gave special considerations based on other factors such as employee safety and moral together with vehicle maintenance. There were also a couple of areas that the taskforce looked at where the TURTLE system would not be feasible to use due to the small number of meters. However, due to these sites' remoteness, the taskforce feels AMR should be applied. Members of the taskforce are currently looking to find another more economical technology to serve these sites. These areas are not included in this plan but should we decide to proceed in these areas, a separate plan will be provided to you for your approval.

List of Attachments

Attachment "A"	H.O.V.E. and Ranchos Financial Analysis
Attachment "B"	Kealia Substation Financial Analysis
Attachment "C"	Captain Cook Substation Financial Analysis
Attachment "D"	Huehue Substation Financial Analysis
Attachment "E"	Fern Acres Financial Analysis

Attachment “A”

**HELCO
Facilitated Revenue Collections
Revenue Requirement
Analysis**

April 2003

Analysis Objectives

- Determine whether cost beneficial to complete Hawaiian Ocean View Estates and Ranchos subdivisions with Turtle Units.

Hawaiian Ocean View Estates & Ranchos FRC

Turtle Material and equipment cost \$112,956
(1009 meters x \$95.00 = \$95,855)
(plus Stores loading .1784)

Turtle Installation and labor costs \$14,176
(1009 meters x 20 min/60 min) x
\$42.15 Field Service per 2003 fcst

Turtle Programming labor costs \$6,928
(1009 meters x 5 min/60 min x
\$82.40 Techcrew per 2003 fcst)

Receiver Material and equipment cost \$5,892

Receiver Installation and labor costs \$2,637
(32 hours x \$82.40 Techcrew per 2003 fcst)

TOTAL CAPITAL COST

\$142,589¹⁰

Hawaiian Ocean View Estates & Ranchos FRC

Software maintenance cost every year \$1,500

Electrical costs for Turtle system per year \$3,536
 $((2 \times 24 \times 365)/1000) \times .20 \times 1009$ meters

TOTAL MAINTENANCE COST \$5,036

Hawaiian Ocean View Estates & Ranchos FRC Hard Savings

- Reduction in meter reading straight time labor - \$18,082.35 per year

HOVE Calculation: (4 meter readers x 8 hrs
x 11 mo x \$42.15 per hour)

HOVR Calculation: (1 meter reader x 7 hrs
x 11 mo x \$42.15 per hour)

Hawaiian Ocean View Estates & Ranchos

FRC Soft Savings

- Reduction in rereads – \$1,405 per year
- Reduction in starts and terminates – \$5,057.99 per year
- Reduction in meter tampering - \$529.32 per year
- Reduction in vehicle maintenance - \$557.07 per year
- Reduction in vehicle fuel - \$256.89 per year
- Improved employee safety/reduction in dog bites - \$4.86 per year

Reduction in Rereads Calculation

- 100 rereads per year in Hawaiian Ocean View Estates x 20 min/60 min x \$42.15 = \$1,405

Reduction in Starts and Terminates Calculation

- 360 starts and terminates per year in Hawaiian Ocean View Estates x 20 min/60 min x \$42.15 = \$5,057.99

Reduction in Meter Tampering Calculation

- Labor costs for 2 linemen x 2 hrs x \$92.65
DCREW from 2003 fcst x 30 meter tampering per
year = \$11,118.00 for Kona District.
- \$11,118.00/ 21,194 March Customer Count in
Kona = .5246
- .5246 x 1009 meters in Hawaiian Ocean View and
Ranchos = \$529.32 savings per year

Vehicle Maintenance Calculation

- Ave Annual Vehicle Maintenance Costs
\$11,701.71/ 21,194 March Customer Count
in Kona = .5521
- .5521 x 1009 meters in Hawaiian Ocean
View Estates & Ranchos = \$557.07 savings
per year

Vehicle Fuel Calculation

- Ave Annual Vehicle Fuel Costs \$5,395.96/
21,194 March Customer Count in Kona =
.2546
- .2546 x 1009 meters in Hawaiian Ocean
View Estates & Ranchos = \$256.89 savings
per year

Improved Employee Safety/Reduction in Dog Bites Calculation

- Dog Bite Costs 1996-2001- \$1,946.21/6 years = \$324.37 per year
- \$324.37 per year / 67,348 March Customer Count = .004816
- .004816 x 1009 meters in Hawaiian Ocean View Estates = \$4.86 savings per year

Hawaiian Ocean View Estates & Ranchos

Revenue Requirement Analysis- Hard & Soft Savings

Facilitated Customer Billing
HELCO Distribution Department
Hard and Soft Savings

Assumptions: Turtle System vs. Current State in Hawaiian Ocean View Estates and Ranchos
Inflation Rate:

Turtle System:

Inflation Rate: 3%
Cost of Equip A (Yr. 1\$) \$ 142,589
Cost of Equip B (Yr. 1\$)
Life of Equipment A 20
Life of Equipment B

Maint for Equip A 5,036
Maint for Equip B

Current State Meter Reader:

Meter Reading ST 18,082.35
Meter Reading OT
Rereads 1405
Starts and Terminates 5057.99
Meter Tampering 529.32
Vehicle Maintenance 557.07
Vehicle Fuel 256.89
Dog Bites 4.86
Bad Debt Collection
Total 25,893.48
Inflation Rate: 3%

Year	20 Yr Cap Rev Req Factors (\$100)	O&M Factor (\$100)	Option A Purchase Rev Req	Option A Maint Rev Req	Option A Total	Option B Purchase Rev Req	Option B Maint Rev Req	Option B Total
1	14.58	109.75	20,789.48	5,527.01	26,316.49	1	28,418.09	28,418.09
2	19.72		28,118.55	5,892.82	33,811.37	2	29,270.64	29,270.64
3	18.93		26,992.10	5,883.60	32,855.70	3	30,148.76	30,148.76
4	18.15		25,879.90	6,039.51	31,919.42	4	31,053.22	31,053.22
5	17.4		24,810.49	6,220.70	31,031.18	5	31,984.82	31,984.82
6	16.65		23,741.07	6,407.32	30,148.39	6	32,944.36	32,944.36
7	15.93		22,714.43	6,589.54	29,313.97	7	33,932.69	33,932.69
8	15.21		21,687.79	6,767.53	28,485.31	8	34,950.67	34,950.67
9	14.51		20,689.66	7,001.45	27,691.11	9	35,999.19	35,999.19
10	13.8		19,677.28	7,211.49	26,888.78	10	37,079.17	37,079.17
11	13.1		18,679.16	7,427.84	26,107.00	11	38,181.54	38,181.54
12	12.4		17,681.04	7,650.67	25,331.71	12	39,337.29	39,337.29
13	11.69		16,688.65	7,880.19	24,548.85	13	40,517.41	40,517.41
14	10.99		15,670.53	8,118.60	23,787.13	14	41,732.93	41,732.93
15	10.28		14,658.15	8,360.10	23,018.25	15	42,984.92	42,984.92
16	9.58		13,660.03	8,610.90	22,270.93	16	44,274.46	44,274.46
17	8.87		12,647.64	8,869.23	21,516.87	17	45,602.70	45,602.70
18	8.17		11,649.52	9,135.31	20,784.83	18	46,970.78	46,970.78
19	7.47		10,651.40	9,409.36	20,060.76	19	48,379.90	48,379.90
20	6.33		9,025.88	9,691.65	18,717.53	20	49,831.30	49,831.30
	263.76			148,512.83	524,605.57		763,604.84	763,604.84

Attachment “B”

**HELCO
Facilitated Revenue Collections
Revenue Requirement
Analysis**

May 2003

Analysis Objectives

- Determine whether cost beneficial to complete Kealia Substation with Turtle Units.

Kealia Substation FRC

Turtle Material and equipment cost \$116,204

(1,108 meters x \$89.00 = \$98,612)

(plus Stores loading .1784)

Turtle Installation and labor costs \$15,567

(1,108 meters x 20 min/60 min) x

\$42.15 Field Service per 2003 fcst

Turtle Programming labor costs \$7,608

(1,108 meters x 5 min/60 min x

\$82.40 Techcrew per 2003 fcst)

Receiver Installation and labor costs \$2,637

(32 hours x \$82.40 Techcrew per 2003 fcst)

TOTAL CAPITAL COST

\$142,016

Kealia Substation FRC

Software maintenance cost every year	\$1,500
Electrical costs for Turtle system per year (((2 x 24 x 365)/1000) x .20) x 1,108 meters	\$3,882
TOTAL MAINTENANCE COST	\$5,382

Kealia Substation

FRC Hard Savings

- Reduction in meter reading straight time labor - \$18,082 per year

Kealia Route 63 Calculation: (3 meter readers x 6 hrs x 11 mo x \$42.15 per hour)

Kealia Route 64 Calculation: (3 meter readers x 6 hrs x 11 mo x \$42.15 per hour and 1 meter reader x 3 hrs x 11 mo x \$42.15 per hour)

Kealia Substation FRC Soft Savings

- Reduction in rereads – \$1,531 per year
- Reduction in starts and terminates – \$5,536 per year
- Reduction in meter tampering - \$581 per year
- Reduction in vehicle maintenance - \$612 per year
- Reduction in vehicle fuel - \$282 per year
- Improved employee safety/reduction in dog bites - \$5.33 per year

Reduction in Rereads Calculation

- 109 rereads per year in Kealia Substation x
20 min/60 min x \$42.15 = \$1,531

Reduction in Starts and Terminates Calculation

- 394 starts and terminates per year in Kealia
Subsation x 20 min/60 min x \$42.15 =
\$5,536

Reduction in Meter Tampering Calculation

- Labor costs for 2 linemen x 2 hrs x \$92.65
DCREW from 2003 fcst x 30 meter tampering per
year = \$11,118.00 for Kona District.
- $\$11,118.00 / 21,194$ March Customer Count in
Kona = .5246
- $.5246 \times 1,108$ meters in Kealia Substation = \$581
savings per year

Vehicle Maintenance Calculation

- Ave Annual Vehicle Maintenance Costs
 $\$11,701.71 / 21,194$ March Customer Count
in Kona = .5521
- $.5521 \times 1,108$ meters in Kealia = \$611.73
savings per year

Vehicle Fuel Calculation

- Ave Annual Vehicle Fuel Costs \$5,395.96/
21,194 March Customer Count in Kona =
.2546
- .2546 x 1,108 meters in Kealia = \$282.10
savings per year

Improved Employee Safety/Reduction in Dog Bites Calculation

- Dog Bite Costs 1996-2001- \$1,946.21/6 years = \$324.37 per year
- \$324.37 per year / 67,348 March Customer Count = .004816
- .004816 x 1,108 meters in Kealia = \$5.33 savings per year

Kealia Substation Revenue Requirement Analysis- Hard & Soft Savings

Facilitated Customer Billing
HELCO Distribution Department
Hard and Soft Savings

Assumptions: Turtle System vs. Current State in Kealia
Inflation Rate:

Turtle System:
Inflation Rate: 3%
Cost of Equip A (Yr.1\$) \$ 142,016
Cost of Equip B (Yr. 1\$)
Life of Equipment A 20
Life of Equipment B

Maint for Equip A 5,382
Maint for Equip B

Current State Meter Reader:
Meter Reading ST 18,082.00
Meter Reading OT
Rereads 1531
Starts and Terminates 5536
Meter Tampering 581
Vehicle Maintenance 812.00
Vehicle Fuel 282.00
Dog Bites 5.33
Bad Debt Collection
Total 26,629.33
Inflation Rate: 3%

Year	20 Yr Cap Rev Req Factors (\$100)	O&M Factor (\$100)	Option A Purchase Rev Req	Option A Maint Rev Req.	Option A Total	Option B Purchase Rev Req	Option B Maint Rev Req.	Option B Total	Difference (A-B)
1	14.58	109.75	20,705.93	5,906.75	26,612.68	1	29,225.69	29,225.69	(2,613.01)
2	19.72		28,005.56	6,083.95	34,089.50	2	30,102.46	30,102.46	3,987.04
3	18.93		26,883.63	6,266.47	33,150.09	3	31,005.53	31,005.53	2,144.56
4	18.15		25,775.90	6,454.46	32,230.36	4	31,935.70	31,935.70	294.66
5	17.4		24,710.78	6,648.09	31,358.88	5	32,893.77	32,893.77	(1,534.89)
6	16.65		23,645.66	6,847.54	30,493.20	6	33,880.58	33,880.58	(3,387.38)
7	15.93		22,623.15	7,052.96	29,676.11	7	34,897.00	34,897.00	(5,220.89)
8	15.21		21,600.63	7,264.55	28,865.18	8	35,943.91	35,943.91	(7,078.73)
9	14.51		20,606.52	7,482.49	28,089.01	9	37,022.23	37,022.23	(8,933.22)
10	13.8		19,598.21	7,706.96	27,305.17	10	38,132.90	38,132.90	(10,827.73)
11	13.1		18,604.10	7,938.17	26,542.27	11	39,278.88	39,278.88	(12,734.62)
12	12.4		17,609.98	8,176.32	25,786.30	12	40,455.19	40,455.19	(14,668.89)
13	11.69		16,601.67	8,421.61	25,023.28	13	41,668.85	41,668.85	(16,645.57)
14	10.99		15,607.56	8,674.25	24,281.81	14	42,918.91	42,918.91	(18,637.10)
15	10.28		14,599.24	8,934.48	23,533.73	15	44,206.48	44,206.48	(20,672.75)
16	9.58		13,605.13	9,202.52	22,807.65	16	45,532.67	45,532.67	(22,725.02)
17	8.87		12,596.82	9,478.59	22,075.41	17	46,898.65	46,898.65	(24,823.24)
18	8.17		11,602.71	9,762.95	21,365.66	18	48,305.61	48,305.61	(26,939.98)
19	7.47		10,608.60	10,055.84	20,664.43	19	49,754.78	49,754.78	(29,090.35)
20	6.33		8,989.61	10,357.51	19,347.13	20	51,247.42	51,247.42	(31,900.30)
	263.76			158,716.45	533,297.85		785,305.23	785,305.23	(252,007.37)

Attachment “C”

**HELCO
Facilitated Revenue Collections
Revenue Requirement
Analysis**

May 2003

Analysis Objectives

- Determine whether cost beneficial to complete Capt. Cook Substation with Turtle Units.

Capt. Cook Substation FRC

Turtle Material and equipment cost	\$108,968
(1039 meters x \$89.00 = \$92,471)	
(plus Stores loading .1784)	
Turtle Installation and labor costs	\$14,598
(1039 meters x 20 min/60 min) x	
\$42.15 Field Service per 2003 fcst	
Turtle Programming labor costs	\$7,134
(1039 meters x 5 min/60 min x	
\$82.40 Techcrew per 2003 fcst)	
Receiver Installation and labor costs	\$2,637
(32 hours x \$82.40 Techcrew per 2003 fcst)	
TOTAL CAPITAL COST	\$133,337

Capt. Cook Substation FRC

Software maintenance cost every year \$1,500

Electrical costs for Turtle system per year \$3,641
 $((2 \times 24 \times 365)/1000) \times .20 \times 1039$ meters

TOTAL MAINTENANCE COST \$5,141

Capt. Cook Substation FRC Hard Savings

- Reduction in meter reading straight time labor -
\$15,300.45 per year

Capt. Cook Route 61 Calculation: (3 meter readers
x 6 hrs x 11 mo x \$42.15 per hour)

Capt. Cook Route 62 Calculation: (2 meter readers
x 6 hrs x 11 mo x \$42.15 per hour and 1 meter
reader x 3 hrs x 11 mo x \$42.15 per hour)

Capt. Cook Substation FRC Soft Savings

- Reduction in rereads – \$1,447 per year
- Reduction in starts and terminates – \$5,184 per year
- Reduction in meter tampering - \$545 per year
- Reduction in vehicle maintenance - \$574 per year
- Reduction in vehicle fuel - \$265 per year
- Improved employee safety/reduction in dog bites - \$5.00 per year

Reduction in Rereads Calculation

- 103 rereads per year in Capt. Cook
Substation x 20 min/60 min x \$42.15 =
\$1,447

Reduction in Starts and Terminates Calculation

- 369 starts and terminates per year in Capt. Cook Subsation x 20 min/60 min x \$42.15 = \$5,184.44

Reduction in Meter Tampering Calculation

- Labor costs for 2 linemen x 2 hrs x \$92.65
DCREW from 2003 fcst x 30 meter tampering per
year = \$11,118.00 for Kona District.
- $\$11,118.00 / 21,194$ March Customer Count in
Kona = .5246
- $.5246 \times 1,039$ meters in Capt. Cook Substation =
\$545 savings per year

Vehicle Maintenance Calculation

- Ave Annual Vehicle Maintenance Costs
\$11,701.71/ 21,194 March Customer Count
in Kona = .5521
- .5521 x 1,039 meters in Capt. Cook =
\$573.63 savings per year

Vehicle Fuel Calculation

- Ave Annual Vehicle Fuel Costs \$5,395.96/
21,194 March Customer Count in Kona =
.2546
- .2546 x 1,039 meters in Capt. Cook =
\$264.53 savings per year

Improved Employee Safety/Reduction in Dog Bites Calculation

- Dog Bite Costs 1996-2001- \$1,946.21/6 years = \$324.37 per year
- \$324.37 per year / 67,348 March Customer Count = .004816
- .004816 x 1,039 meters in Capt. Cook = \$5.00 savings per year

Capt. Cook Substation Revenue Requirement Analysis- Hard & Soft Savings

Facilitated Customer Billing
HELCO Distribution Department
Hard and Soft Savings

Assumptions: Turtle System vs. Current State in Capt. Cook
Inflation Rate:

Turtle System:
Inflation Rate: 3%
Cost of Equip A (Yr. 1\$) \$ 133,337
Cost of Equip B (Yr. 1\$)
Life of Equipment A 20
Life of Equipment B

Maint for Equip A 5,141
Maint for Equip B

Current State Meter Reader:
Meter Reading ST 15,300.45
Meter Reading OT
Rereads 1447
Starts and Terminates 5184
Meter Tampering 545
Vehicle Maintenance 574.00
Vehicle Fuel 285.00
Dog Bites 5.00
Bad Debt Collection
Total 23,320.45
Inflation Rate: 3%

Year	20 Yr Cap Rev Req Factors (\$100)	O&M Factor (\$100)	Option A Purchase Rev Req	Option A Maint Rev Req	Option A Total	Option B Purchase Rev Req	Option B Maint Rev Req	Option B Total	Difference (A-B)
1	14.58	109.75	19,440.53	5,642.25	25,082.78	1	25,594.19	25,594.19	(511.41)
2	19.72		26,294.06	5,811.51	32,105.57	2	26,362.02	26,362.02	5,743.55
3	18.93		25,240.69	5,985.86	31,226.55	3	27,152.88	27,152.88	4,073.67
4	18.15		24,200.67	6,165.44	30,366.10	4	27,967.47	27,967.47	2,398.63
5	17.4		23,200.64	6,350.40	29,551.04	5	28,806.49	28,806.49	744.55
6	16.65		22,200.61	6,540.91	28,741.52	6	29,670.69	29,670.69	(929.16)
7	15.93		21,240.58	6,737.14	27,977.72	7	30,560.81	30,560.81	(2,583.08)
8	15.21		20,280.56	6,938.25	27,219.81	8	31,477.83	31,477.83	(4,257.82)
9	14.51		19,347.20	7,147.43	26,494.63	9	32,421.96	32,421.96	(5,927.33)
10	13.8		18,400.51	7,361.85	25,762.36	10	33,394.62	33,394.62	(7,632.26)
11	13.1		17,467.15	7,582.71	25,049.86	11	34,396.46	34,396.46	(9,346.60)
12	12.4		16,533.79	7,810.19	24,343.98	12	35,428.35	35,428.35	(11,084.37)
13	11.69		15,587.10	8,044.50	23,631.59	13	36,491.20	36,491.20	(12,859.61)
14	10.99		14,653.74	8,285.83	22,939.57	14	37,585.94	37,585.94	(14,646.37)
15	10.28		13,707.04	8,534.41	22,241.45	15	38,713.51	38,713.51	(16,472.07)
16	9.58		12,773.68	8,790.44	21,564.12	16	39,874.92	39,874.92	(18,310.80)
17	8.87		11,826.99	9,054.15	20,881.14	17	41,071.17	41,071.17	(20,190.02)
18	8.17		10,893.63	9,325.78	20,219.41	18	42,303.30	42,303.30	(22,083.89)
19	7.47		9,960.27	9,605.55	19,565.82	19	43,572.40	43,572.40	(24,006.58)
20	6.33		8,440.23	9,893.72	18,333.95	20	44,879.57	44,879.57	(26,545.63)
	263.76			151,609.30	503,298.97		687,725.57	687,725.57	(184,426.60)

Attachment "D"

**HELCO
Facilitated Revenue Collections
Revenue Requirement
Analysis**

May 2003

Analysis Objectives

- Determine whether cost beneficial to complete Huehue Substation with Turtle Units.

Huehue Substation FRC

Turtle Material and equipment cost \$43,314

(413 meters x \$89.00 = \$36,757)

(plus Stores loading .1784)

Turtle Installation and labor costs \$5,803

(413 meters x 20 min/60 min) x

\$42.15 Field Service per 2003 fcst

Turtle Programming labor costs \$2,836

(413 meters x 5 min/60 min x

\$82.40 Techcrew per 2003 fcst)

Receiver Installation and labor costs \$2,637

(32 hours x \$82.40 Techcrew per 2003 fcst)

TOTAL CAPITAL COST \$54,590

Huehue Substation FRC

Software maintenance cost every year \$1,500

Electrical costs for Turtle system per year \$1,447
(((2 x 24 x 365)/1000) x .20) x 413 meters

TOTAL MAINTENANCE COST \$2,947

Huehue Substation

FRC Hard Savings

- Reduction in meter reading straight time labor - \$3,709.20 per year

Huehue Calculation: (1 meter readers x 8 hrs x 11 mo x \$42.15 per hour)

Huehue Substation FRC Soft Savings

- Reduction in rereads – \$576 per year
- Reduction in starts and terminates – \$2,065 per year
- Reduction in meter tampering - \$217 per year
- Reduction in vehicle maintenance - \$228 per year
- Reduction in vehicle fuel - \$105 per year
- Improved employee safety/reduction in dog bites - \$1.99 per year

Reduction in Rereads Calculation

- 41 rereads per year in Huehue Substation x
20 min/60 min x \$42.15 = \$576

Reduction in Starts and Terminates Calculation

- 147 starts and terminates per year in
Huehue Substation x 20 min/60 min x
\$42.15 = \$2,065.35

Reduction in Meter Tampering Calculation

- Labor costs for 2 linemen x 2 hrs x \$92.65
DCREW from 2003 fcst x 30 meter tampering per
year = \$11,118.00 for Kona District.
- $\$11,118.00 / 21,194$ March Customer Count in
Kona = .5246
- $.5246 \times 413$ meters in Huehue Substation =
\$216.66 savings per year

Vehicle Maintenance Calculation

- Ave Annual Vehicle Maintenance Costs
\$11,701.71/ 21,194 March Customer Count
in Kona = .5521
- .5521 x 413 meters in Huehue = \$228.02
savings per year

Vehicle Fuel Calculation

- Ave Annual Vehicle Fuel Costs \$5,395.96/
21,194 March Customer Count in Kona =
.2546
- .2546 x 413 meters in Huehue = \$105.14
savings per year

Improved Employee Safety/Reduction in Dog Bites Calculation

- Dog Bite Costs 1996-2001- \$1,946.21/6 years = \$324.37 per year
- \$324.37 per year / 67,348 March Customer Count = .004816
- .004816 x 413 meters in Huehue = \$1.99 savings per year

Huehue Substation Revenue Requirement Analysis- Hard & Soft Savings

Facilitated Customer Billing
HELCO Distribution Department
Hard and Soft Savings

Assumptions: Turtle System vs. Current State in Huehue
Inflation Rate:

Turtle System:
Inflation Rate: 3%
Cost of Equip A (Yr. 1\$) \$ 54,590
Cost of Equip B (Yr. 1\$)
Life of Equipment A 20
Life of Equipment B
Maint for Equip A 2,947
Maint for Equip B

Current State Meter Reader:
Meter Reading ST 3,709.20
Meter Reading OT
Rereads 576
Starts and Terminates 2085
Meter Tampering 217
Vehicle Maintenance 228.00
Vehicle Fuel 105.00
Dog Bites 1.99
Bad Debt Collection
Total 6,902.19
Inflation Rate: 3%

Year	20 Yr Cap Rev Req Factors (\$100)	O&M Factor (\$100)	Option A Purchase Rev Req	Option A Maint Rev Req.	Option A Total	Option B Purchase Rev Req	Option B Maint Rev Req.	Option B Total	Difference (A-B)
1	14.58	109.75	7,959.22	3,234.33	11,193.55	1	7,575.15	7,575.15	3,618.40
2	19.72		10,765.15	3,331.38	14,096.51	2	7,802.41	7,802.41	6,294.10
3	18.93		10,333.89	3,431.30	13,765.19	3	8,038.48	8,038.48	5,728.71
4	18.15		9,908.09	3,534.24	13,442.33	4	8,277.57	8,277.57	5,164.75
5	17.4		9,498.66	3,640.27	13,138.93	5	8,525.90	8,525.90	4,613.03
6	16.65		9,089.24	3,749.48	12,838.71	6	8,781.68	8,781.68	4,057.03
7	15.93		8,696.19	3,861.96	12,558.15	7	9,045.13	9,045.13	3,513.02
8	15.21		8,303.14	3,977.82	12,280.96	8	9,316.48	9,316.48	2,964.48
9	14.51		7,921.01	4,097.18	12,018.18	9	9,595.98	9,595.98	2,422.19
10	13.8		7,533.42	4,220.07	11,753.49	10	9,883.88	9,883.88	1,869.63
11	13.1		7,151.29	4,348.67	11,497.96	11	10,180.37	10,180.37	1,317.59
12	12.4		6,769.16	4,477.07	11,246.23	12	10,485.78	10,485.78	760.45
13	11.69		6,381.57	4,611.38	10,992.96	13	10,800.36	10,800.36	192.60
14	10.99		5,999.44	4,749.73	10,749.17	14	11,124.37	11,124.37	(375.20)
15	10.28		5,611.85	4,892.22	10,504.07	15	11,458.10	11,458.10	(954.03)
16	9.58		5,229.72	5,038.98	10,268.71	16	11,801.84	11,801.84	(1,533.14)
17	8.87		4,842.13	5,190.15	10,032.29	17	12,155.90	12,155.90	(2,123.61)
18	8.17		4,460.00	5,345.88	9,805.88	18	12,520.57	12,520.57	(2,714.71)
19	7.47		4,077.87	5,506.23	9,584.11	19	12,896.19	12,896.19	(3,312.08)
20	6.33		3,455.55	5,671.42	9,126.97	20	13,283.08	13,283.08	(4,156.11)
	263.76			86,907.73	230,894.31		203,547.21	203,547.21	27,347.10

Attachment "E"

HELCO
Facilitated Revenue Collections
Revenue Requirement
Analysis

May 2003

Analysis Objectives

- Determine whether cost beneficial to complete Fern Acres Subdivision with Turtle Units.

Fern Acres Substation FRC

Turtle Material and equipment cost	\$37,336
(356 meters x \$89.00 = \$31,684)	
(plus Stores loading .1784)	
Turtle Installation and labor costs	\$5,002
(356 meters x 20 min/60 min) x	
\$42.15 Field Service per 2003 fcst	
Turtle Programming labor costs	\$2,445
(356 meters x 5 min/60 min x	
\$82.40 Techcrew per 2003 fcst)	
Receiver Installation and labor costs	\$2,637
(32 hours x \$82.40 Techcrew per 2003 fcst)	
TOTAL CAPITAL COST	\$47,420

Fern Acres Subdivision FRC

Software maintenance cost every year	\$200
Electrical costs for Turtle system per year (((2 x 24 x 365)/1000) x .20) x 356 meters	\$1,247
TOTAL MAINTENANCE COST	\$1,447

Fern Acres Subdivision FRC Hard Savings

- Reduction in meter reading overtime labor - \$927.30
- Fern Acres Calculation (2 hours x 11 mo x \$42.15 per hour)

Fern Acres Subdivision FRC Soft Savings

- Reduction in rereads – \$492 per year
- Reduction in starts and terminates – \$1,784 per year
- Reduction in meter tampering - \$186.75 per year
- Reduction in vehicle maintenance - \$196.55 per year
- Reduction in vehicle fuel - \$90.64 per year
- Improved employee safety/reduction in dog bites - \$1.71 per year
- Reduction in bad debt write-offs - \$2,622 per year
(Note: Savings can include either OT hard savings or reduction in bad debt write-offs).

Reduction in Rereads Calculation

- 35 rereads per year in Fern Acres x 20 min/60 min x \$42.15 = \$492

Reduction in Starts and Terminates Calculation

- 127 starts and terminates per year in Fern Acres x 20 min/60 min x \$42.15 = \$1,784

Reduction in Meter Tampering Calculation

- Labor costs for 2 linemen x 2 hrs x \$92.65
DCREW from 2003 fcst x 30 meter tampering per
year = \$11,118 for Kona District.
- \$11,118/ 21,194 March Customer Count in Kona
= .5246
- .5246 x 356 meters in Fern Acres = \$186.75
savings per year

Vehicle Maintenance Calculation

- Ave Annual Vehicle Maintenance Costs
 $\$11,701.71 / 21,194$ March Customer Count
in Kona = .5521
- $.5521 \times 356$ meters in Fern Acres = \$196.55
savings per year

Vehicle Fuel Calculation

- Ave Annual Vehicle Fuel Costs \$5,395.96/
21,194 March Customer Count in Kona =
.2546
- .2546 x 356 meters in Fern Acres = \$90.64
savings per year

Improved Employee Safety/Reduction in Dog Bites Calculation

- Dog Bite Costs 1996-2001- \$1,946.21/6 years = \$324.37 per year
- \$324.37 per year / 67,348 March Customer Count = .004816
- .004816 x 356 meters in Fern Acres = \$1.71 savings per year

Reduction in Bad Debt Write-offs Calculation

- Assume meter reader who used to read meter in Fern Acres can now perform 20 collections per month x 11 mo = 220 collections per year
- \$505,833.63 went to bad debt in the Hilo District last year / 1,061 bad debt accounts = \$476.75 Ave. Bad Debt Bill
- \$476.75 x 220 collections = \$104,885.00 x .025 = \$2,622.13 saved from going to bad debt per year

Fern Acres

Revenue Requirement Analysis- Hard Savings and Soft Savings

Facilitated Customer Billing
HELCO Distribution Department
Hard and Soft Savings

Assumptions: Turtle System vs. Current State in Fern Acres
Inflation Rate:

Turtle System:
Inflation Rate: 3%
Cost of Equip A (Yr. 1\$) \$ 47,420
Cost of Equip B (Yr. 1\$)
Life of Equipment A 20
Life of Equipment B

Maint for Equip A 1,447
Maint for Equip B

Current State Meter Reader:
Meter Reading ST
Meter Reading OT 927.30
Rereads 492
Starts and Terminates 1784
Meter Tampering 186.75
Vehicle Maintenance 196.55
Vehicle Fuel 90.64
Dog Bites 1.71
Bad Debt Collection 2,622.00
Total 6,300.95
Inflation Rate: 3%

Year	20 Yr Cap Rev Req Factors (\$100)	O&M Factor (\$100)	Option A Purchase Rev Req	Option A Maint Rev Req	Option A Total	Option B Purchase Rev Req	Option B Maint Rev Req	Option B Total	Difference (A-B)
1	14.58	109.75	6,913.84	1,588.08	8,501.92	1	6,915.29	6,915.29	1,586.63
2	19.72		9,351.22	1,635.72	10,986.95	2	7,122.75	7,122.75	3,864.20
3	18.93		8,976.61	1,684.80	10,661.40	3	7,336.43	7,336.43	3,324.97
4	18.15		8,606.73	1,735.34	10,342.07	4	7,556.53	7,556.53	2,785.54
5	17.4		8,251.08	1,787.40	10,038.48	5	7,783.22	7,783.22	2,255.26
6	16.65		7,895.43	1,841.02	9,736.45	6	8,016.72	8,016.72	1,719.73
7	15.93		7,554.01	1,896.25	9,450.26	7	8,257.22	8,257.22	1,193.04
8	15.21		7,212.58	1,953.14	9,165.72	8	8,504.94	8,504.94	660.79
9	14.51		6,880.84	2,011.74	8,892.38	9	8,760.09	8,760.09	132.29
10	13.8		6,543.96	2,072.09	8,616.05	10	9,022.89	9,022.89	(406.84)
11	13.1		6,212.02	2,134.25	8,346.27	11	9,293.58	9,293.58	(947.30)
12	12.4		5,880.08	2,198.28	8,078.36	12	9,572.38	9,572.38	(1,494.02)
13	11.69		5,543.40	2,264.23	7,807.62	13	9,859.55	9,859.55	(2,051.93)
14	10.99		5,211.46	2,332.15	7,543.61	14	10,155.34	10,155.34	(2,611.73)
15	10.28		4,874.78	2,402.12	7,276.89	15	10,460.00	10,460.00	(3,183.11)
16	9.58		4,542.84	2,474.18	7,017.02	16	10,773.80	10,773.80	(3,756.78)
17	8.87		4,208.15	2,548.41	6,756.56	17	11,097.01	11,097.01	(4,342.45)
18	8.17		3,874.21	2,624.86	6,499.07	18	11,429.93	11,429.93	(4,930.85)
19	7.47		3,542.27	2,703.60	6,245.88	19	11,772.82	11,772.82	(5,526.94)
20	6.33		3,001.69	2,784.71	5,786.40	20	12,128.01	12,128.01	(6,339.61)
	263.76			42,672.37	167,747.36		185,816.50	185,816.50	(18,069.14)

CA-IR-430

Ref: HELCO-WP-1401 & Response to CA-IR-182 (Plant Additions).

In response to CA-IR-182, HELCO provided PIAs for 18 of the 21 projects set forth on HELCO-WP-1401 in excess of \$500,000. Pages 39-46 of Attachment 1 represent the PIA for Project H0001249, Alii Heights Unit 2 Ph. 1 S/D. In general terms, the PIA involves HELCO extending its underground distribution system to serve a residential subdivision. Please provide the following:

- a. The "issues, impacts, considerations" section (Attachment 1, page 42) indicates that Towne Keauhou LLC will make a total payment of \$211,427 toward the project (i.e., advance of \$103,400 and contribution of \$108,027). Please provide the following:
 1. HELCO-WP-1409 does not identify any 2006 advance associated with this project. Did HELCO collect the advance from the developer in 2005 or 2006? Please explain.
 2. HELCO-WP-1409 does not identify any 2006 contribution associated with this project. Did HELCO collect the contribution from the developer in 2005 or 2006? Please explain.
 3. If the responses to parts (a)(1) and (a)(2) above indicate that the advance or the contribution were collected by HELCO in 2006, please refer to HELCO-WP-1409 and explain how such amounts were reflected in the 2006 test year forecast.
 4. If the responses to parts (a)(1) and (a)(2) above indicate that the advance or the contribution were collected by HELCO in 2005, please explain HELCO's accounting for these developer payments and how such amounts were reflected in the test year forecast.
- b. The "issues, impacts, considerations" section (Attachment 1, page 42) also state that "this project will grow the business and generate revenues for HELCO when permanent services are energized." Please provide the following:
 1. Have permanent service been energized? If so, when? If not, when are the permanent services expected to be energized?
 2. Please describe the total scope of the residential subdivision (i.e., number of homes and other amenities) and explain the current status of the subdivision build-out.

HELCO Response:

a.1.HELCO collected two payments from the developer in 2005. Ten percent payment (\$21,143) was received on January 21, 2005. Ninety percent payment (\$190,284) was received on April 6, 2005. Total payment received in 2005 includes \$103,400 as advance and \$108,027 as CIAC for a total of \$211,427. A refund of \$18,440 was issued in August 2006 to the developer.

a.2.See a.1. above.

a.3. Not applicable.

a.4. The payments collected in 2005 were credited to the advance and CIAC accounts in 2005 and HELCO's 2006 test year advance and CIAC forecast did not include contributions for this project.

b.1. Yes. Permanent services have been energized to 16 lots; including 15 houses and one water tank. The homes were energized in June and July of 2005. The project was not completed until the workorders were closed on January 13, 2006 so the project is plant added in 2006 as shown on HELCO-WP-1401, page 1.

b.2. This subdivision is one of the largest in West Hawaii. It began with engineering Unit 1 Phase 1 in the year 2001. HELCO began connecting homes to Unit 1 Phase 1 in year 2003. Unit 1 progressed through phases 1, 2 and 3 and was mostly completed energizing by the end of year 2003. Unit 1 Phases 1 through 3 consists of 78 single family homes. Energizing Unit 2 Phase 1 started in year 2005. Unit 2 has completed phases 1, 2, 3, 4, and has just energized phase 5 in September 2006. There are a total of 135 homes included in Unit 2 Phases 1 through 5. There are no other phases for Unit 2.

CA-IR-431

Ref: HELCO-WP-1401 & Response to CA-IR-182 (Plant Additions).

In response to CA-IR-182, HELCO provided PIAs for 18 of the 21 projects set forth on HELCO-WP-1401 in excess of \$500,000. Pages 47-56 of Attachment 1 represent the PIA for Project H0001360, Kuakini Distr & Svcs. In general terms, the PIA involves HELCO converting a 12.47KV overhead distribution line to a permanent underground distribution line, as requested by the County of Hawaii. Please provide the following:

- a. The "contributions" section (Attachment 1, page 51) identifies \$240,000 of "in kind" contributions (including GET) for with this project. Please provide the following:
 1. HELCO-WP-1409 does not identify a 2006 contribution associated with this project. Did HELCO actually collect the \$240,000 from the County of Hawaii in 2006? Please explain.
 2. Is the \$674,283 for the 2006 plant addition (see HELCO-WP-1401) gross or net of the \$240,000 contribution? Please explain.
 3. Please explain HELCO's accounting for the County of Hawaii contribution and how such amount was reflected in the test year forecast, with specific reference to HELCO-WP-1409.
- b. The "contributions" section (Attachment 1, page 51) also identifies \$705,000 of "cost sharing" (including GET) associated with this project. Please explain and describe the reference to project "cost sharing," particularly in the context of the \$705,000 amount.

HELCO Response:

- a.1.This was an "in-kind" contribution. See HELCO T-14, page 10 starting at line 9 for the definition of "in-kind" contribution. For this project, the in-kind contribution was for underground distribution facilities (trenches, ducts, and manholes) for which both materials and labor were provided by the County of Hawaii and became the property of HELCO.
- a.2.The \$674,283 for the 2006 plant addition does not include the \$240,000 in-kind contribution as the planner had included the \$240,000 in-kind contribution with the 69KV overhead part of the overall project completed in 2005. See Attachment 1 for details.
- a.3.Refer to subpart a.2.

- b. The \$705,000 cost sharing was entered on the wrong line of the Project Identification Form.

It should have been listed as "In Cash" under the heading "Contributions". This cash contribution is a combination of costs on this project and on a related earlier project number H0000704. The two projects; H0000704 completed in 2005 and H0001360 completed in 2006 were actually two parts of a larger project approved by the PUC on Docket Number 04-0186. The capital cost approved for the total job (both together) was \$1,768,367. This cost included the \$240,000 in kind contribution and \$564,962 cash contribution. Under the terms of our utility agreement with the County of Hawaii, once the project is completed, a final accounting is performed and the County must pay the actual cost of their share of the project. This is not likely to be exactly \$564,962.

Since the total project was not completed in 2005, the County of Hawaii was not asked to pay its cash contribution. This is required only at the completion of the project. Since, the project needed to continue into 2006, a new project authorization was created for the underground portion of the project (H0001360) which authorized the funds for the project to continue. This new project carried forward the County's cash contribution.

The amount of \$705,000 was HELCO's best estimate at the time of what the County's actual cash contribution would be. At this time, the final actual amount is still not determined.

Project # H0001360 Kuakini Distr & Svcs	
Line Item	FY06
11/15/05 adjust	\$2,002
11/15/05 adjust	\$164
AFUDC-Kukio UG Conv	\$0
CIAC In-Kind	\$240,000
Corp Admin OH H0001360	\$5,979
Crew	\$36,137
Crew	\$4,113
Crew-Sup-NI	\$1,497
Crew-UG (Switching)	\$2,963
Empl Benefits OH H0001360	\$12,478
Energy Delivery OHH0001360	\$51,262
Inspection-Inspector	\$4,173
Non Productive Wages (NPW) OH H0001360	\$6,049
Outside Construction	\$240,000
Outside Services-HECO Design	\$7,000
Outside Services-HECO FF	\$15,000
Payroll Tax OHH0001360	\$4,145
Stock Material	\$42,056
Stores OHH0001360	\$4,984
Traffic Control	\$3,940
Total	\$683,941*

* - This total does not precisely align with the original plant add amount of \$674,283 in WP-1401 because Pillar automatically updates estimates according to the latest figures for overhead and labor rates. The total of \$683,941 is Pillar's total as of 9/26/06.

CA-IR-432

Ref: HELCO-WP-1401 & Response to CA-IR-182 (Plant Additions).

In response to CA-IR-182, HELCO provided PIAs for 18 of the 21 projects set forth on HELCO-WP-1401 in excess of \$500,000. Pages 57-62 of Attachment 1 represent the PIA for Project H0001368, Kaloko Unit #2 Transf. In general terms, the PIA involves HELCO installing a substation transformer and switchgear in an existing substation to serve the Kaloko Heights subdivision. Please provide the following:

- a. The "justification" section (Attachment 1, page 59) indicates that "the anticipated load is 6 MW" and that the "project cost is prorated based on anticipated loads."
 1. Please explain what is meant by the statement that the "project cost is prorated based on anticipated loads."
 2. Does the \$816,635 of 2006 plant addition (see HELCO-WP-1401) represent a prorated cost estimate? Please explain.
- b. The "contributions" section (Attachment 1, page 61) identifies a \$452,489 cash advance "contribution in advance paid by developer" (including GET), associated with this project. Please provide the following:
 1. HELCO-WP-1409 does not identify any 2006 contribution associated with this project. Did HELCO actually collect the \$452,489 from the developer in 2006? Please explain.
 2. Is the \$816,635 for the 2006 plant addition (see HELCO-WP-1401) gross or net of the \$452,489 contribution?
 3. Please explain HELCO's accounting for the developer payment and how such amount was reflected in the test year forecast, with specific reference to HELCO-WP-1409.

HELCO Response:

- a.1 The statement, "project cost is prorated based on anticipated loads" means the contribution from the developer was based on the ratio of the estimated development load demand to the total capacity of the new substation transformer. For example, the estimated development load demand is 6MVA of the 10MVA substation transformer capacity resulting in the developer's cost contribution of 60% of the estimated cost of the project.
- a.2 No. \$816,635 represents the total cost estimate of the substation transformer installation for Project H0001368. This substation transformer project also includes the installation of a 15KV two feeder switchgear connected directly to the transformer.
- b.1 HELCO collected \$90,498 on June 2005 as the initial payment and collected the remaining balance of \$361,991 on April 2006. The advance contribution collected in 2006 (\$361,991) was inadvertently not identified in the test year forecast of advance contributions. HELCO will adjust the 2006 test year advance forecast at the end of 2006 with actual year end information.
- b.2 The \$816,635 represents the cost of the substation project and is the gross amount which includes the advance contribution from the developer.
- b.3 The amount of \$361,991 was recorded as advance (MIMS GL Code 25200000) in 2006, but inadvertently not listed in HELCO-WP-1409 (C).

CA-IR-433

Ref: HELCO Responses to CA-IR-214 and CA-IR-22, Confidential Attachment Table C-1; Cost Increases Mainly Due to New Housing Development.

According to the CA-IR-214 response, "Specifically, Table C-RS1 documents the rise in residential new construction since 1997." However, the Confidential Table C-2 in CA-IR-22 clearly shows that the majority of GWH sales growth is caused by customers classes other than Residential. Please explain all reasons why HELCO's inclining block rate design proposal that is intended to promote consumption efficiency and fair allocation of costs is appropriate for Residential customers, while Rate Schedules J and P that also contribute significantly to demand and cost growth are proposed to continue with declining block energy rates (do not repeat the response to CA-IR-230).

HELCO Response:

A residential rate with relatively high maximum demand charges, combined with a flat energy charge, is probably an economically more efficient design than the inclining block design proposed by HELCO. Unfortunately, this design, which gives larger consumers lower rates, would exacerbate the billing impacts of HELCO's proposed rate increase to many smaller residential consumers who have the least ability to afford or respond to a substantial increase in the costs of their basic electricity use. The inclining block rate structure that HELCO proposes has the unique ability to both send strong, high price signals to larger residential consumers who are most likely to invest in energy efficiency, while maintaining affordable rate levels for basic electricity use for all residential consumers.

CA-IR-434

Ref: HELCO Response to CA-IR-230, Load Factor Rates.

According to the CA-IR-230 response, "An inclining block commercial rate would remove the incentive for efficient consumption and possibly assign significantly increased costs to the largest users, many of which are high load factor customers now." Please respond to the following:

- a. Explain whether and why it is Mr. Orans' or HELCO's belief that high load factor customers' are more efficiently served by HELCO, such that declining block rates are appropriate for such customers as load factor increases?
- b. Does Mr. Orans or HELCO believe that any correlation exists between residential customers, KWH usage levels and their load factors, such that customers with loads falling in the proposed third tier of the proposed Residential rate are reasonably assumed to be lower load factor customers?
- c. If the response to part (b) of this information request is negative, please explain why residential customers with higher monthly kwh usage are thought to be using electricity less efficiently than lower usage customers.
- d. If the response to part (b) of this information request is positive, please provide complete copies of all studies, reports, workpapers, calculations, projections and other information relied upon in support of your response.

HELCO Response:

- a. High load factor customers are generally less costly to serve on a per kWh basis because they have higher asset utilization than low load factor customers. A large portion of utility costs are driven by customer's maximum demand, rather than their energy usage. If we consider two customers with the same maximum demands, the utility's non-energy costs to serve each customer would be the same, all other things being equal. The high load factor customer will have more kWh than the low load factor customer, so the average per kWh cost to serve the high load factor customer will be lower, as there are more kWh over which to spread those maximum-demand-driven costs.

The load factor rate reflects this relationship by reducing the effective average per kWh rate for customers as their load factor increases. Note that an increase in usage would not

necessarily result in a lower average per kWh rate if the customer's maximum demand were to also increase.

- b. Since residential customers do not have demand meters, there is insufficient information to draw conclusions about the relationship between residential usage levels and load factors. In the commercial class, it is clear that higher usage is highly correlated with higher load factors and lower average costs.
- c. In a high marginal cost environment, as is the case for HELCO, the marginal unit of energy is more expensive to provide than the average. Residential customers with higher monthly usage are "less efficient" in the sense that they are disproportionately causing the need for expensive additional capacity and high marginal cost energy compared to lower usage customers.
- d. Not applicable.

CA-IR-435

Ref: T-20, page 35; Rider A Rate Design.

Please provide the following information regarding Rider A:

- a. Explain which specific cost of service results were relied upon to develop each of the proposed Rider A rate elements, indicating any cost discounting, allocations and other input assumptions employed, providing reference into relevant WP-2001 for each cost input value.
- b. Describe whether and how Rider A is proposed to be modified or supplanted by the proposed Standby Rate filed by HELCO in Docket No. 03-0371 on August 28, 2006.
- c. For each HELCO customer served under Rider A in the test year, describe the customer's facility and utilization of Rider A and provide a copy of the contract for such service.
- d. For each HELCO customer taking service under Rider A in the test year, provide calculations of annual revenue impacts to the customer(s), illustrating how the proposed Rider A rates compare to present Rider A rates and to proposed Standby Rates at test year billing determinants.

HELCO Response:

- a. The derivation of the Standby Demand Charge is shown on HELCO-WP-2001, page 79.

The Generation Demand, Transmission Demand, and Distribution Demand costs in columns (a) and (b) are from HELCO-WP-2001, page 8. The formula for transmission demand allocated to the standby rate is correct in the electronic spreadsheet but incorrect as shown in footnote 1. The correct formula is 60% of Transmission Demand Cost is treated as Generation Demand (i.e., only 20% of the cost applies) and 40% of the Transmission Demand Cost is treated as Distribution Demand (i.e., 100% of the cost applies). So, effectively $60\% \times 20\% + 40\% \times 100\% = 52\%$ of the Transmission Demand Cost is allocated to the Rider A standby rate. The non-coincident sales mW on L5 is found on HELCO-WP-2001, page 9. The calculated standby rate per kW on L6 is found by taking L4 and dividing by L5. The derivation of the Scheduled Maintenance Service Energy Charge is shown on HELCO-WP-2001, page 80. The Energy Revenues at Eq ROR are from HELCO-WP-2001, page 8. The Adjustments from HELCO-302 are found at HELCO-302 pages 3 and 5. The

L4 Sales mWh are found on HELCO-WP-2001, page 9.

- b. Rider A will be supplanted by the proposed HELCO Standby Rate, filed in Docket No. 03-0371 on August 28, 2006, when the Commission issues a decision and order in that docket to allow the proposed Standby Rates to take effect.
- c. The two Rider A customers are hospitals that have their own co-generation facilities. HELCO supplies standby service to the hospitals under Rider A. Copies of the Rider A contracts are attached. Additional information concerning the two Rider A customers can be found in HELCO's Rider A -- Standby Service Report filed August 7, 2006 in Docket No. 99-0207.
- d. For the Schedule J, Rider A customer, estimated annual revenue at present Rider A rates is about \$687,100 as shown on HELCO-WP-302, page 108 and estimated annual revenue at proposed Rider A rates is about \$721,300 as shown on HELCO-WP-302, page 109. The estimated annual revenue at the proposed standby rates filed in Docket No. 03-0371 cannot be determined without daily demand data or an assumption about daily demand. If we assume that the Schedule J customer has zero daily backup demand, then the estimated annual revenue at the proposed standby rates filed in Docket No. 03-0371 is simply the \$699,400 shown in HELCO-WP-302, page 109 plus the proposed standby reservation charge for twelve months, \$13.86 per kW x 455 kW x 12, or about \$75,700, for a total of about \$775,100 per year.

For the Schedule P, Rider A customer, estimated annual revenue at present Rider A rates is about \$653,200 as shown on HELCO-WP-302, page 130 and estimated annual revenue at proposed Rider A rates is about \$691,800 as shown on HELCO-WP-302, page 130. The estimated annual revenue at the proposed standby rates filed in Docket No. 03-0371 cannot

be determined without daily demand data or an assumption about daily demand. If we assume that the Schedule P customer has zero daily backup demand, then the estimated annual revenue at the proposed standby rates filed in Docket No. 03-0371 is simply the \$705,700 shown in HELCO-WP-302, page 130 plus the proposed standby reservation charge for twelve months, $\$14.62 \text{ per kW} \times 730 \text{ kW} \times 12$, or about \$128,100, for a total of about \$833,800 per year.

The requested information is confidential and will be provided pursuant to Protective Order No. 22593, dated June 30, 2006.

CA-IR-436

Ref: T-20, pages 21-30; Determination of Proposed Customer Charges.

HELCO is proposing no change to the \$10 monthly Residential Customer Charge, but has proposed significantly increased Customer Charge amounts for Schedules G, J, H and P. The testimony on this topic merely recites the percentage of calculated customer costs or total fixed costs that the proposed charge recovers, which percentages vary among rates for no identified reasons. Please provide the following information:

- a. Explain in detail the procedures employed, calculations and rationale supportive of the specific dollar amounts of the proposed customer charges.
- b. Provide complete copies of rate analyses workpapers and other documents associated in any way with the response to part (a) of this information request.
- c. If the cost recovery percentages recited in testimony were the sources of guidance relied upon to actually determine the proposed rate levels, please describe how the recovery percentages were determined to be reasonable.
- d. Provide complete copies of all studies, reports, workpapers and other information supportive of your response to part (c) of this information request.

HELCO Response:

- a. HELCO is not proposing a change to the existing \$10 monthly residential customer charge (single phase) in conjunction with the proposed tiered energy rate charges in order to manage the bill impact to those residential customers who use less electricity. HELCO's proposed increase in Schedule G customer charges keeps total rate design revenue from Schedule G customer charges at proposed rates at about the same percentage (about 25%) of the class customer-related and demand-related costs as the existing Schedule G customer charges (about 24%). For Schedule G, HELCO did not want to increase the relative proportion of fixed cost recovery from small commercial customers in light of the significant total revenue increase assigned to Schedule G. For the remaining rate classes, all of which have demand charges, Schedules J, H, and P, total customer-related costs have changed at significantly different rates: Schedule J customer-related costs per customer have declined since the last rate case while the customer-related costs per customer in

Schedule H and Schedule P have increased significantly. The procedure employed for Schedule J, H, and P customer charge rate design was to assign a significant increase that would recover at least 50% of the class customer costs, which reasonably limits the amount that has to be recovered in energy charges. By coincidence, the rate design customer charges recover about the same amount of class customer costs (53% each for Schedule J and Schedule H, 56% for Schedule P, see HELCO-2017 for rate design customer charge revenue and HELCO-2007 for class customer cost).

- b. See the attached pages from HELCO's February 13, 2001 filing of tariff sheets and workpapers in support of the final rate increase approved by the Commission in Decision and Order No. 18365 in Docket No. 99-0207. These pages show the Schedule G rate design customer charge revenue and total customer and demand costs at current rates.
- c. See response to subpart a.
- d. See response to subpart b.

HAWAII ELECTRIC LIGHT COMPANY, INC.
SCHEDULE G - GENERAL SERVICE NON-DEMAND
DOCKET NO. 99-0207 TEST-YEAR 2000
FINAL RATES EFFECTIVE FEBRUARY 19, 2001 D&O No. 18365

ESTIMATE OF TEST-YEAR REVENUES

	BILLING UNITS MWH	PRESENT RATES		PROPOSED RATES	
		UNIT PRICE ¢/KWH	REVENUES \$1000S	UNIT PRICE ¢/KWH	REVENUES \$1000S
ENERGY CHARGE:	77,800.0	18.9649	14,754.7	21.2694	16,615.4
	<u>BILLS</u>	<u>\$/BILL</u>		<u>\$/BILL</u>	
CUSTOMER CHARGE:					
1 PHASE	79,300	26.00	2,061.8	28.00	2,220.4
3 PHASE	23,348	45.00	1,050.7	48.00	1,120.7
SUBTOTAL	102,648		3,112.5		3,341.1
POWER FACTOR ADJ.			0		0.0
MINIMUM BILL ADJ.			0		0.0
SCHEDULE E ADJ.					-28.7
Other Base Adj.			0.0		0.0
SUBTOTAL			0.0		(28.7)
Total Base Rev.			17,867.2		19,930.8
FCS, 1		0.347	62.0	0	0.0
Other & Adj.					
SUBTOTAL			62		0
FOA, ¢/KWH	77800	1.1480	893.1	0.0000	0.0
Other ¢/KWH Adj					
SUBTOTAL			893.1		0.0
TOTAL REVENUES			18,822.3		19,930.8

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DOCKET NO. 05-0315
PAGE 4 OF 4

ATTACHMENT D
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HAWAII ELECTRIC LIGHT COMPANY, INC.
TEST YEAR 2000, DOCKET NO. 99-0207 FINAL
FUNCTIONALIZED CLASS SALES REVENUES AT PROPOSED RATES (\$000s)

		RESIDENTIAL SERVICE R	GEN SERV NON-DMD G	GEN SERV DEMAND J	COMMERCIAL SERVICE H	LARGE POWER P	STREET LIGHTING F	TOTAL SYSTEM
<u>PRODUCTION</u>								
DEMAND	D1	20,529.0	5,646.8	14,498.4	1,633.9	11,605.6	259.2	54,172.8
ENERGY	E1	27,888.7	6,192.1	19,247.6	1,924.8	18,408.4	302.5	73,964.0
TOTAL PRODUCTION		48,417.7	11,838.8	33,746.0	3,558.7	30,014.0	561.7	128,136.8
<u>TRANSMISSION</u>								
	D1	4,281.5	1,467.8	4,187.3	386.8	3,599.7	69.7	13,992.9
<u>DISTRIBUTION</u>								
SUBSTATIONS	D2	1,530.6	544.6	1,351.8	142.9	976.9	24.9	4,571.7
PRIMARY LINES								
DEMAND	D2	1,840.8	614.9	1,484.3	165.6	1,053.4	27.8	5,186.9
CUSTOMER	C1	4,781.0	1,177.0	293.8	45.6	17.2	10.0	6,324.7
SUBTOTAL PRIMARY LINES		6,621.8	1,792.0	1,778.1	211.2	1,070.6	37.8	11,511.6
SECONDARY LINES								
DEMAND	D3	1,245.1	309.3	667.8	72.9	187.5	12.0	2,494.6
CUSTOMER	C2	1,832.9	396.2	77.3	15.2	4.4	3.8	2,329.9
SUBTOTAL SECONDARY LINES		3,078.1	705.5	745.1	88.1	191.9	15.8	4,824.5
SUBTOTAL LINES		9,699.9	2,497.5	2,523.2	299.3	1,262.5	53.6	16,336.0
LINE TRANSFORMERS								
DEMAND	D3	1,089.9	321.5	745.0	70.7	218.6	12.8	2,458.5
CUSTOMER	C3	1,219.0	1,501.0	529.7	76.1	50.2	3.1	3,379.2
SUBTOTAL TRANSFORMERS		2,308.9	1,822.5	1,274.7	146.8	268.9	15.8	5,837.6
SERVICES	C4	1,987.1	508.9	129.6	25.1	11.6	3.6	2,665.8
METERS	C5	1,073.7	350.9	615.1	45.0	68.9	2.2	2,155.8
STREET LIGHTING	C9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DISTRIBUTION TOTAL		16,600.1	5,724.4	5,894.5	659.1	2,588.8	100.1	31,566.9
CUSTOMER ACCOUNTS	C6	2,997.8	628.8	147.0	28.7	8.9	6.5	3,817.8
UNCOLLECTIBLES	C7	251.1	57.2	29.2	0.0	0.0	0.0	337.5
CUSTOMER SERVICE	C8	903.3	213.8	29.0	28.2	234.7	0.0	1,409.0
TOTALS BY CLASSIFICATION								
DEMAND		30,517.0	8,904.8	22,934.6	2,472.8	17,641.8	406.3	82,877.3
ENERGY		27,888.7	6,192.1	19,247.6	1,924.8	18,408.4	302.5	73,964.0
CUSTOMER		15,045.9	4,833.9	1,850.7	263.9	395.9	29.2	22,419.5
TOTAL		73,451.5	19,930.8	44,032.9	4,661.5	36,446.1	738.0	179,260.8

CA-IR-437

Ref: T-20, pages 24, 26 and 29; Determination of Proposed Demand Charges.

HELCO is proposing significantly increased Demand Charge amounts for Schedules J, H and P. The testimony on this topic merely recites the percentage of calculated demand-related costs that the proposed charge recovers, which percentages vary among rates for no identified reasons.

Please provide the following information:

- a. Explain in detail the procedures employed, calculations and rationale supportive of the specific dollar amounts of the proposed demand/capacity charges.
- b. Provide complete copies of rate analyses workpapers and other documents associated in any way with the response to part (a) of this information request.
- c. If the cost recovery percentages recited in testimony were the sources of guidance relied upon to actually determine the proposed demand/capacity rate levels, please describe how the recovery percentages were determined to be reasonable.
- d. Provide complete copies of all studies, reports, workpapers and other information supportive of your response to part (c) of this information request.

HELCO Response:

- a. The proposed increases in demand charges for Schedule J and Schedule H were targeted to be in round dollar amounts, a \$5.00 per kWb increase to \$12.00 per kWb for Schedule J and a \$2.00 per kWb increase to \$9.00 per kWb for Schedule H. As a check, it was desired that the demand charge as a percentage of demand cost increase versus current rates for Schedule J (31% at proposed versus 25% at current rates) and stay about the same for Schedule H, since it is proposed to be closed to new customers (23% at proposed versus 24% at current rates). For Schedule P, a significant move up in demand charges was sought, subject to keeping the absolute level of the charge below \$20.00 per kWb, hence the proposed demand charge of \$19.50 per kWb in the first demand block which recovers about 44% of the demand cost, versus about 30% at current rates. The proposed demand charges are compared to their unit demand costs in HELCO-2008.
- b. See the attached pages from HELCO's February 13, 2001 filing of tariff sheets and

workpapers in support of the final rate increase approved by the Commission in Decision and Order No. 18365 in Docket No. 99-0207. These pages show the Schedule J, H, and P rate design demand charges and the unit demand costs at current rates.

- c. See the response to subpart a. above.
- d. See the response to subpart b. above.

HAWAII ELECTRIC LIGHT COMPANY, INC.
 SCHEDULE J - GENERAL SERVICE DEMAND
 DOCKET NO. 99-0207 TEST-YEAR 2000
 FINAL RATES EFFECTIVE FEBRUARY 15, 2001 D&D No. 18365

ESTIMATE OF TEST-YEAR REVENUES

	BIDLING UNITS MWH	PRESENT RATES		PROPOSED RATES	
		UNIT PRICE \$/KWH	REVENUES \$1000S	UNIT PRICE \$/KWH	REVENUES \$1000S
<u>ENERGY CHARGE:</u>					
0 - 200 KWH/KW	155,435.3	15.0940	23,445.9	16.4579	25,591.4
201 - 400 KWH/KW	73,510.0	12.8669	9,456.5	14.2407	10,468.3
> 400 KWH/KW	13,354.7	11.8659	1,594.7	13.2397	1,762.1
SUBTOTAL	242,300.0		34,497.1		37,821.8
<u>CUSTOMER CHARGE:</u>					
	BILLS	\$/BILL		\$/BILL	
1 PHASE	1,313	31.00	56.2	33.00	59.8
3 PHASE	13,139	53.00	696.4	56.00	735.6
SUBTOTAL	14,952		752.6		795.6
DEMAND CHARGE:	897,336.0	5.75	5,159.7	7.00	6,281.4
<u>ADJUSTMENTS:</u>					
TRANS VOLT ADJ (TP)			0.0		0.0
PRI VOLT ADJ (DP)			(145.3)		(161.6)
PRI VOLT ADJ (DS)			(16.3)		(19.1)
PF ADJ			(7.3)		(8.1)
MINIMUM BILL ADJ.			0.0		0.0
SCHEDULE E ADJ.			0.0		(41.6)
Rider Adj.			(627.1)		(632.5)
SUBTOTAL			(796.0)		(861.9)
Total Base Revenue:			39,605.4		44,032.9
FIRM CAP. SURCHRG. %		0.347	137.4	0.000	0.0
Other % Adj.					
FOA, \$/KWH	MWH 242,300.0	1.146	2,781.6	0.000	0.0
Other \$/KWH Adj.					
Total Rev. Adj.			2,919.0		0.0
Other Adj.					
TOTAL SALES REV.			42,524.4		44,032.9

E

HAWAII ELECTRIC LIGHT COMPANY, INC.
SCHEDULE S - COMMERCIAL COOKING, HEATING,
AIR CONDITIONING & REFRIGERATION SERVICE
DOCKET NO. 99-0207 TEST-YEAR 2000
FINAL RATES EFFECTIVE FEBRUARY 15, 2001 D&D No. 18365

ESTIMATE OF TEST-YEAR REVENUES

	BILLING	PRESENT RATES		PROPOSED RATES	
	UNITS	UNIT PRICE	REVENUES	UNIT PRICE	REVENUES
	MWH	CENTS/KWH	\$1000s	CENTS/KWH	\$1000s
ENERGY CHARGE:	24200	13.5879	3,238.3	15.9189	3,852.4
	KW	\$/KW		\$/KW	
CAPACITY CHARGE:	93,013	7.00	651.1	7.00	651.1
	BILLS	\$/BILL/MO		\$/BILL/MO	
CUSTOMER CHARGE:					
1 PHASE	1,859	28.00	52.1	28.00	52.1
3 PHASE	2,473	45.00	111.3	45.00	111.3
SUBTOTAL	4,332		163.4		163.4
UNADJUSTED BASE REV.			4,162.8		4666.9
ADJUSTMENTS:	MWH				
FOA, Cents/kwh	24200	1.148	277.8	0	0.0
SUBTOTAL			277.8		0.0
SCHEDULE E ADJ.			0.0		-5.4
UNADJ. TOTAL REV.			4,380.6		4661.5
FCS, %		0.347	14.2	0	0.0
TOTAL REVENUES			4,394.8		4,661.5

CA-IR-437
DOCKET NO. 05-0315
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ATTACHMENT F
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HAWAII ELECTRIC LIGHT COMPANY, INC.
SCHEDULE P - LARGE POWER SERVICE
ESTIMATE OF TEST-YEAR REVENUES
DOCKET NO. 99-0207 TEST-YEAR 2006
FINAL RATES EFFECTIVE FEBRUARY 15, 2001 D&C No. 18365.

	PRESENT RATES			PROPOSED RATES	
	BILLING UNITS	UNIT PRICE	REVENUES \$1000S	UNIT PRICE	REVENUES \$1000S
ENERGY CHARGE:	(MWH)	CENTS/KWH		CENTS/KWH	
0 - 200 KWH/K	96,959	13.5168	13,376.1	15.2290	15,070.5
201 - 400 KWH/K	93,725	11.3367	10,625.3	13.0486	12,330.0
> 400 KWH/K	44,116	10.3337	4,558.8	12.0456	5,314.1
SUBTOTAL	236,800		28,560.2		32,614.6
DEMAND CHARGE:	(KW)	\$/KW		\$/KW	
0 - 500 KW	328,205	10.75	3,528.2	11.25	3,692.3
> 500 KW	172,196	10.25	1,765.0	10.75	1,851.1
SUBTOTAL	500,403		5,293.2		5,543.4
	BILLS	\$/BILL		\$/BILL	
CUSTOMER CHARGE:	756	375.00	283.5	375.00	283.5
ADJUSTMENTS:					
PF			(457.0)		(515.1)
TP			0.0		0.0
DP			(1,016.8)		(1,146.1)
DS			(28.6)		(32.2)
RIDER T			0		0
RIDER M			(244.5)		(272.2)
Schedule U			0		0.0
SCHEDULE E ADJ.			0.0		(29.8)
SUBTOTAL			(1,746.9)		(1,995.4)
Base Revenue:			32,390.0		36,446.2
FCS ADJ.		0.347	112.4	0	0.0
FUEL OIL ADJ.	236800	1.148	2,718.6	0.000	0.0
SUBTOTAL			2,830.9		0.0
TOTAL REVENUES			35,220.9		36,446.2

*These reflect the correct values after an error in the allocation of KW to demand rate blocks is corrected.

HAWAII ELECTRIC LIGHT COMPANY, INC.
TEST YEAR 2000, DOCKET NO. 99-0207 FINAL
UNIT FUNCTIONALIZED CLASS SALES REVENUES AT PROPOSED RATES

		RESIDENTIAL SERVICE R	GEN SERV NON-DMD G	GEN SERV DEMAND J	COMMERCIAL SERVICE H	LARGE POWER P	STREET LIGHTING F	TOTAL SYSTEM
ENERGY	UNITS							
PRODUCTION	¢ / kwh	7.948	7.959	7.944	7.954	7.774	7.961	7.904
DEMAND								
PRODUCTION	\$/kW/mo	\$7.67	\$14.11	\$17.83	\$19.58	\$24.36	\$22.42	\$12.14
TRANSMISSION	\$/kW/mo	\$1.60	\$3.67	\$5.15	\$4.64	\$7.56	\$6.03	\$3.14
DISTRIBUTION PRIMARY								
SUBSTATIONS	\$/kW/mo	\$0.57	\$1.36	\$1.66	\$1.71	\$2.05	\$2.15	\$1.02
PRIMARY LINES	\$/kW/mo	\$0.69	\$1.54	\$1.83	\$1.98	\$2.21	\$2.40	\$1.16
PRIMARY DEMAND	\$/kW/mo	\$1.26	\$2.90	\$3.49	\$3.70	\$4.26	\$4.55	\$2.19
DISTRIBUTION SECONDARY								
SECONDARY LINES	\$/kW/mo	\$0.46	\$0.77	\$0.82	\$0.87	\$0.39	\$1.04	\$0.56
LINE TRANSFORMERS	\$/kW/mo	\$0.41	\$0.80	\$0.92	\$0.85	\$0.46	\$1.10	\$0.55
SECONDARY DEMAND	\$/kW/mo	\$0.87	\$1.58	\$1.74	\$1.72	\$0.85	\$2.14	\$1.11
DISTRIBUTION DEMAND	\$/kW/mo	\$2.13	\$4.47	\$5.22	\$5.42	\$5.11	\$6.69	\$3.30
TOTAL DEMAND	\$/kW/mo	\$11.40	\$22.25	\$28.20	\$29.64	\$37.03	\$35.15	\$18.57
TOTAL DEMAND AND ENERGY	¢ / kwh	16.645	19.405	17.409	18.172	15.224	18.653	16.760
CUSTOMER								
PRIMARY LINES	\$/CUST/mo	\$7.56	\$11.47	\$19.65	\$10.53	\$22.73	\$9.67	\$8.36
SECONDARY LINES	\$/CUST/mo	\$2.90	\$3.86	\$5.17	\$3.52	\$5.79	\$3.71	\$3.08
LINE TRANSFORMERS	\$/CUST/mo	\$1.93	\$14.62	\$35.43	\$17.57	\$66.46	\$3.00	\$4.47
SERVICES	\$/CUST/mo	\$3.14	\$4.96	\$8.67	\$5.79	\$15.33	\$3.47	\$3.52
METERS	\$/CUST/mo	\$1.70	\$3.42	\$41.14	\$10.39	\$91.13	\$2.12	\$2.85
STREET LIGHTING	\$/CUST/mo	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CUSTOMER ACCOUNTS	\$/CUST/mo	\$4.74	\$6.13	\$9.83	\$6.63	\$11.76	\$6.30	\$5.05
UNCOLLECTIBLES	\$/CUST/mo	\$0.40	\$0.56	\$1.95	\$0.00	\$0.00	\$0.00	\$0.45
CUSTOMER SERVICE	\$/CUST/mo	\$1.43	\$2.08	\$1.94	\$6.50	\$310.50	\$0.00	\$1.86
TOTAL CUSTOMER	\$/CUST/mo	\$23.78	\$47.09	\$123.78	\$60.93	\$523.71	\$28.26	\$29.64
TOTAL UNIT COST	¢ / kwh	20.932	25.618	18.173	19.262	15.391	19.421	19.156
UTILIZING FACTORS								
ENERGY SALES	MWH	350,900	77,800	242,300	24,200	236,800	3,800	935,800
SUM OF CUSTOMER DEMANDS	MW (N-C)	2,677.8	400.2	813.2	83.4	476.4	11.6	4,462.6
AVERAGE ANNUAL CUSTOMERS	NUMBER	52,720	8,554	1,246	361	63	86	63,030

CA-IR-438

Ref: HELCO Response to CA-IR-227; Production O&M Classification.

According to the response at part (c), "All of the non-fuel production O&M expenses are classified as demand-related in HELCO's cost of service study." Please respond to the following:

- a. Is Mr. Young aware of any steam unit O&M expenses that are variable with output levels, rather than being fixed costs, such as emission fees, boiler chemicals, demineralizer chemicals, etc.?
- b. If the response to part (a) of this information request is affirmative, please list and quantify each known steam production O&M expense element other than fuel that is believed to not be a fixed capacity cost.
- c. If the response to part (a) is negative, please explain the basis for, and provide complete copies of all documents relied upon to support Mr. Young's "understanding that the determination of the test-year estimates of non-fuel production O&M expenses are based on activities related to the operation and maintenance of the generation plant facilities."
- d. Please explain Mr. Young's understanding of cost causation for boiler maintenance expenses chargeable to NARUC Account 512, indicating the extent to which the scope of boiler maintenance is increased upon use of the boiler to produce electricity.
- e. The response to part (c) also states, "...diesel and combustion turbine overhaul costs tend to vary based on run hours or adjusted run hours (taking into account the number of starts) rather than based on kWh generated." Please explain whether Mr. Young believes that such costs are a fixed cost associated with the capacity of such units that does not vary based upon output levels.
- f. Please explain whether or not Mr. Young believes that diesel or CT overhaul expenses would tend to be higher for a diesel or CT generating unit of any given capacity that produces significantly more energy than another unit that is rarely started or dispatched?
- g. According to part (c) of the response, "As has been discussed in other dockets to which the Consumer Advocate is a party, production O&M generally does not vary directly with kWh generated." Please state whether HELCO has done any additional work to study or determine a more precise classification of production O&M expenses since this issue was raised by the Consumer Advocate in prior rate case proceedings.
- h. If the response to part (g) of this information request is negative, please provide complete copies of any studies, reports, analyses, workpapers or published authority that is relied upon by the Company to treat all non-fuel production demand costs as fixed capacity costs to be allocated on a demand basis.

HELCO Response:

- a. Mr. Young is not familiar with the nature of the test year steam unit O&M expenses.
- b. Not applicable.
- c. Mr. Young relies upon the results of operations summary at HELCO-2101 to provide the

separation of production (generation facilities), transmission, and distribution O&M.

- d. Mr. Young is not familiar with the cost causation for boiler maintenance expenses chargeable to NARUC Account 512.
- e. Mr. Young believes that diesel and combustion turbine overhaul costs are demand-related costs associated with enabling the capacity of such units.
- f. Mr. Young is unsure whether diesel or CT overhaul expenses would tend to be higher for a diesel or CT generating unit of any given capacity that produces significantly more energy than another unit that is rarely started or dispatched. Some of the factors that may have to be considered are the age of the unit (difficulty of overhaul, availability of parts), and the date of the unit's last overhaul (*when is the next overhaul required*).
- g. HELCO has not studied classification of production O&M expenses prior to the filing of this rate case.
- h. The Company relies upon the Commission-approved cost of service studies presented by HECO, HELCO, and MECO in recent rate cases. In all of these cases, the utility has treated non-fuel production demand costs as demand-related costs.

CA-IR-439

Ref: T-20, pages 26 and 27; Schedule H Rate Design.

Please provide the following information regarding Schedule H:

- a. Explain whether there is now, or has been in the recent past, any cost of service basis for providing the Schedule H end-use service, rather than systematically migrating the remaining 264 customers onto Schedules G, J or P.
- b. State each reason for the Company's proposed provision allowing "customers with existing Schedule H service to relocate their Schedule H service."
- c. Explain in detail how customers with existing Schedule H service may be impacted by a policy that requires migration onto another service schedule within five years of closing Schedule H to new customers, with reference to anticipated billing demand impacts, metering impacts, customer charge issues and any re-wiring or other customer impacts that are anticipated.
- d. Provide complete copies of all studies, workpapers, reports, projections and other documents produced by or for HELCO to evaluate its options regarding Schedule H service, including, but not limited, to the proposals stated by Mr. Young as well as each other option that was considered.
- e. How many of the approximately 264 test year Schedule H customers are believed by HELCO to have combined loads of:
 - i. 25 kW or less?
 - ii. between 25kW and 200 kW?
 - iii. over 200 kW?

HELCO Response:

- a. Currently, the cost of service for small Schedule H customers (less than 25 kW) is similar to the cost of service for Schedule G customers, and the cost of service for larger Schedule H customers (25 kW and greater) is similar to the cost of service for Schedule J customers.
- b. This proposal affords existing Schedule H customers a transition period as long as they maintain Schedule H service.
- c. If Schedule H customers are required to migrate onto another service schedule, these customers can anticipate higher billed demand because Schedule H billing kW exclusions will be eliminated. These customers could also choose to incur re-wiring costs to move service into a single meter to save customer charges (Schedule H customers typically have a

Schedule G or Schedule J service that accompanies the Schedule H service) and increase load factor (which lowers energy charges on Schedule J and Schedule P). Customers with loads that exceed 5000 kWh or 25 kW will need to have HELCO install a demand meter.

- d. There are no such studies.
- e. HELCO does not have test year estimates of Schedule H customers by kW requirement since HELCO does not meter kW for Schedule H customers. However, based on the October 2004 to September 2005 billing data, 2,663 Schedule H bills were for 25 kWb or less and 107 Schedule H bills were for between 25 kWb and 200 kWb. In addition, 152 Schedule K bills were for 25 kWb or less and 667 Schedule K bills were for between 25 kWb and 200 kWb. There were no Schedule H nor Schedule K accounts in excess of 200 kWb.

CA-IR-440

Ref: T-20, page 43, HELCO-106, p.47; Schedule TOU-R Rate Design.

Please provide the following information regarding the proposed TOU-R rate design:

- a. Provide estimated cost information for the "difference in the installed cost of the time-of-use meter versus the regular meter" indicating the extent to which the proposed added \$1.00 of monthly customer charge will timely recover such incremental cost.
- b. At present usage patterns, what portion of an average Schedule R customer's energy consumption is during Priority Peak Period, Mid-Peak period and Off-Peak period?
- c. Explain how the 300 meter limit for TOU-R was developed and describe when/how it is expected to be modified upon completion of the new Customer Information System.
- d. How does HELCO intend to promote TOU-R service, so that customers are aware of the rate, and can evaluate whether to participate? Provide copies of any documents used to support the response.
- e. To what extent does HELCO expect that a typical customer would incur any costs pursuant to Rule 14 for shared use of telephone lines to participate in TOU-R service?
- f. What has been the customer participation rate to-date in HECO's TOU-R service and how have customers' bills been impacted?
- g. Please provide copies of, or reference to, any reports produced by HECO with respect to its TOU-R service experience.
- h. Explain the rationale behind the proposed 200% of Rider T on-peak energy rate adjustment, 100% of Rider T mid-peak energy rate adjustment and 160% of off-peak Rider T energy adjustment rates.

HELCO Response:

- a. HELCO relied upon the differences in meter cost estimates in the HECO TY 2005 rate case, Docket No. 04-0113. Schedule R single phase installed meter costs are \$85.63 per typical meter and \$186.97 per TOU meter; Schedule R three phase installed meter costs are \$206.94 per typical meter and \$237.51 per TOU meter (HECO-WP-2202, page 118, Docket No. 04-0113). In the HECO case, these cost differences translate to revenue requirement differences of \$1.38 per month for single phase service and \$0.42 per month for three phase service, as shown in the response to CA-IR-233 in Docket No. 04-0113. The proposed added \$1.00 of monthly customer charge would cover this incremental cost.
- b. According to the HELCO 2001-2002 Class Load Study, Table 5.5, Schedule R kWh load

was about 17% Priority Peak, 52% On-Peak, and 31% Off-Peak. HELCO's 2001-2002 Class Load Study is referenced in HELCO's response to CA-IR-225.

- c. The 300 meter limit for Schedule TOU-R was developed based on approximately 0.5% of the total number of test year Schedule R customers. That limit will be adjusted or eliminated either upon completion of the new Customer Information System or in the next HELCO general rate case following completion of the new Customer Information System.
- d. See HELCO's response to CA-IR-421.
- e. At this time, HELCO does not expect the typical Schedule TOU-R customer to incur any costs pursuant to Rule 14 for shared use of telephone lines to participate in TOU-R service. However, the proposed Schedule TOU-R does provide the Company the ability to request shared-use of a customer's telephone line to remotely download customer's usage data from the meter.
- f. HECO does not currently have TOU-R service; HECO's TOU-R service proposal remains before the Commission in Docket No. 04-0113. HECO's pilot TOU-R program, which terminated in May, 2006, enrolled 189 customers. Preliminary results of customer bill impacts were presented in HECO-2237 in Docket No. 04-0113, which showed average customer savings of about \$2.00 per month and \$6.00 per month, depending on the billing option.
- g. See the response to part f. above.
- h. The rationale behind the proposed rate design is to set rates so that a Schedule TOU-R customer achieves savings only by shifting energy consumption out of the priority peak and mid-peak periods into the off-peak period. There is a clear advantage to off-peak consumption, but a built-in surcharge to on-peak consumption, similar to the existing Rider

T design.

CA-IR-441

Ref: T-20, page 44, HELCO-106, p.50; Schedule TOU-G Rate Design.

Please provide the following information regarding the proposed TOU-G rate design:

- a. Provide estimated cost information for the "difference in the installed cost of the time-of-use meter versus the regular meter" indicating the extent to which the proposed added \$4.00 of monthly customer charge will timely recover such incremental cost.
- b. At present usage patterns, what portion of an average Schedule G customer's energy consumption is during Priority Peak Period, Mid-Peak period and Off-Peak period?
- c. Explain how the 100 meter limit for TOU-R was developed and describe when/how it is expected to be modified upon completion of the new Customer Information System.
- d. How does HELCO intend to promote TOU-G service, so that customers are aware of the rate and can evaluate whether to participate? Provide copies of any documents to be used.
- e. To what extent does HELCO expect that a typical customer would incur any costs pursuant to Rule 14 for shared use of telephone lines to participate in TOU-G service?
- f. What has been the customer participation rate to-date in HELCO's TOU-G service and how have customers' bills been impacted?
- g. Please provide copies of, or reference to, any reports produced by HELCO with respect to its TOU-G service experience.
- h. Explain the rationale behind the proposed 200% of Rider T on-peak energy rate adjustment, 100% of Rider T mid-peak energy rate adjustment and 160% of off-peak Rider T energy adjustment rates.
- i. Please confirm that the specification of Priority Peak period in the testimony is correct, and the proposed tariff should be corrected to state 5:00 pm to 9:00 pm, Monday – Friday.

HELCO Response:

- a. The difference in the installed cost of the time-of-use meter versus the regular meter was not estimated. The proposed \$4.00 difference between the Schedule TOU-G customer charges and the proposed customer charges in Schedule G was set at 40% of the existing time-of-use meter charge of \$10 per month for Rider M and Rider T customers.
- b. According to the HELCO 2001-2002 Class Load Study, Table 6.5, Schedule G kWh load was about 14% Priority Peak, 59% On-Peak, and 27% Off-Peak. The HELCO 2001-2002 Class Load Study is referenced in HELCO's response to CA-IR-225.
- c. The 100 meter limit for Schedule TOU-G was developed based on approximately 1.0% of

the total number of test year Schedule G customers. That limit will be adjusted or eliminated either upon completion of the new Customer Information System or in the next HELCO general rate case following completion of the new Customer Information System.

- d. See HELCO's response to CA-IR-421.
- e. At this time, HELCO does not expect the typical Schedule TOU-G customer to incur any costs pursuant to Rule 14 for shared use of telephone lines to participate in TOU-G service. However, the proposed Schedule TOU-G does provide the Company the ability to request shared-use of a customer's telephone line to remotely download customer's usage data from the meter.
- f. HECO does not currently have TOU-C non-demand service, which would be HECO's equivalent to the proposed HELCO TOU-G service; HECO's TOU-C service proposal remains before the Commission in Docket No. 04-0113.
- g. See the response to part f. above.
- h. The rationale behind the proposed rate design is to set rates so that a Schedule TOU-G customer achieves savings only by shifting energy consumption out of the priority peak and mid-peak periods into the off-peak period. There is a clear advantage to off-peak consumption, but a built-in surcharge to on-peak consumption, similar to the existing Rider T design.
- i. Yes, the specification of Priority Peak period in the testimony is correct, and the proposed tariff should be corrected to state 5:00 pm to 9:00 pm, Monday – Friday.

CA-IR-442

Ref: T-20, page 45, HELCO-106, p.53; Schedule TOU-J Rate Design.

Please provide the following information regarding the proposed TOU-J rate design:

- a. Provide estimated cost information for the “difference in the installed cost of the time-of-use meter versus the regular meter” indicating the extent to which the proposed added \$10.00 of monthly customer charge will timely recover such incremental cost.
- b. At present usage patterns, what portion of an average Schedule J customers’ energy consumption is during Priority Peak Period, Mid-Peak period and Off-Peak period?
- c. Explain how the 50 meter limit for TOU-J was developed and describe when/how it is expected to be modified upon completion of the new Customer Information System.
- d. How does HELCO intend to promote TOU-J service, so that customers are aware of the rate and can evaluate whether to participate? Provide copies of any documents to support the response.
- e. Explain the basis for the proposed Priority Peak demand charge of \$19.25, beyond observing the 50% of unit demand cost result that is achieved by the rate.
- f. What types of customers does HELCO believe may benefit from participation in TOU-J, given the nature of their loads and the ability to shift demand and energy consumption to mid-peak and off-peak periods?
- g. Explain the rationale behind the proposed 280% of Rider T on-peak energy rate adjustment, 200% of Rider T mid-peak energy rate adjustment and 160% of off-peak Rider T energy adjustment rates.
- h. Please confirm that the specification of Priority Peak period in the testimony is correct, and the proposed tariff should be corrected to state 5:00 pm to 9:00 pm, Monday – Friday.

HELCO Response:

- a. The difference in the installed cost of the time-of-use meter versus the regular meter was not estimated. The proposed \$10.00 difference between the Schedule TOU-J customer charges and the proposed customer charges in Schedule J is equal to the existing time-of-use meter charge of \$10 per month for Rider M and Rider T customers.
- b. According to the HELCO 2001-2002 Class Load Study, Table 7.5, Schedule J kWh load was about 12% Priority Peak, 57% On-Peak, and 31% Off-Peak. The HELCO 2001-2002 Class Load Study is referenced in HELCO’s response to CA-IR-225.
- c. The 50 meter limit for Schedule TOU-J was selected based on approximately twice the

number of existing Rider T and Rider M customers. That limit will be adjusted or eliminated either upon completion of the new Customer Information System or in the next HELCO general rate case following completion of the new Customer Information System.

- d. See HELCO's response to CA-IR-421.
- e. As indicated in HELCO T-20, page 47, the proposed demand charge of \$19.25 per kW for the priority peak period was set to recover about one-half of the full unit demand cost for Schedule J at proposed rates, see HELCO-WP-2001, page 7. This is significant because the regular Schedule J proposed demand charge recovers only about 31% of the Schedule J demand costs, 35% if the effect of the proposed change in demand ratchet is included.
- f. HELCO does not know what types of Schedule J customers may benefit from taking the proposed Schedule TOU-J rate option. HELCO does not have information on the ability of Schedule J customers to shift load to periods where the electricity charges are lower.
- g. The rationale behind the proposed rate design is to set rates so that a Schedule TOU-J customer achieves savings only by shifting energy consumption out of the priority peak and mid-peak periods into the off-peak period. There is a clear advantage to off-peak consumption, but a built-in surcharge to on-peak consumption, similar to the existing Rider T design.
- h. Yes, the specification of Priority Peak period in the testimony is correct, and the proposed tariff should be corrected to state 5:00 pm to 9:00 pm, Monday – Friday.

CA-IR-443

Ref: T-20, page 48, HELCO-106, p.56; Schedule TOU-P Rate Design.

Please provide the following information regarding the proposed TOU-P rate design:

- a. Provide estimated cost information for the “difference in the installed cost of the time-of-use meter versus the regular meter” indicating the extent to which the proposed added \$10.00 of monthly customer charge will timely recover such incremental cost.
- b. At present usage patterns, what portion of an average Schedule P customers’ energy consumption is during Priority Peak Period, Mid-Peak period and Off-Peak period?
- c. Explain how the 12 meter limit for TOU-P was developed and describe when/how it is expected to be modified upon completion of the new Customer Information System.
- d. How does HELCO intend to promote TOU-P service, so that customers are aware of the rate and can evaluate whether to participate? Provide copies of any documents to be used.
- e. Explain the basis for the proposed Priority Peak demand charge of \$24.50, beyond observing the 55% of unit demand cost result that is achieved by the rate.
- f. Has HELCO identified any specific Schedule P customers that may immediately benefit from participation in TOU-P, given the nature of their loads and the ability to shift demand and energy consumption to mid-peak and off-peak periods?
- g. If the response to part (f) of the information request is affirmative, please identify and quantify the savings potential to each such customer.
- h. Explain the rationale behind the proposed 280% of Rider T on-peak energy rate adjustment, 200% of Rider T mid-peak energy rate adjustment and 160% of off-peak Rider T energy adjustment rates.
- i. Please confirm that the specification of Priority Peak period in the testimony is correct, and the proposed tariff should be corrected to state 5:00 pm to 9:00 pm, Monday – Friday.

HELCO Response:

- a. The difference in the installed cost of the time-of-use meter versus the regular meter was not estimated. The proposed \$10.00 difference between the Schedule TOU-P customer charges and the proposed customer charges in Schedule P is equal to the existing time-of-use meter charge of \$10 per month for Rider M and Rider T customers.
- b. According to the HELCO 2001-2002 Class Load Study, Table 9.5, Schedule P kWh load was about 12% Priority Peak, 52% On-Peak, and 36% Off-Peak. The HELCO 2001-2002 Class Load Study is referenced in HELCO’s response to CA-IR-225.
- c. The 12 meter limit for Schedule TOU-P was selected based on approximately 20% of the

Schedule P 2006 test year customers. That limit will be adjusted or eliminated either upon completion of the new Customer Information System or in the next HELCO general rate case following completion of the new Customer Information System.

- d. See HELCO's response to CA-IR-421.
- e. As indicated in HELCO T-20, page 49, the proposed TOU-P demand charge of \$24.50 per kW for the priority peak period, which is \$5.00 per kW more than the highest demand charge for Schedule P, was set to recover about 55% of the full unit demand cost for Schedule P at proposed rates, see HELCO-WP-2001, page 7. This is significant because the regular Schedule P proposed demand charge recovers only about 44% of the Schedule P demand costs in the first block of demand charges.
- f. HELCO does not know what types of Schedule P customers may benefit from taking the proposed Schedule TOU-P rate option. HELCO does not have information on the ability of Schedule P customers to shift load to periods where the electricity charges are lower.
- g. Not applicable.
- h. The rationale behind the proposed rate design is to set rates so that a Schedule TOU-P customer achieves savings only by shifting energy consumption out of the priority peak and mid-peak periods into the off-peak period. There is a clear advantage to off-peak consumption, but a built-in surcharge to on-peak consumption, similar to the existing Rider T design.
- i. Yes, the specification of Priority Peak period in the testimony is correct, and the proposed tariff should be corrected to state 5:00 pm to 9:00 pm, Monday – Friday.

CA-IR-444

Ref: HELCO-WP-2012, page 3; Variable O&M Expenses.

Please define what is contained in "Variable O&M", explain the derivation of the "Variable O&M Expenses (2006 cents/kWh) on line 2 and provide complete copies of all workpapers, reports, calculations, projections and other supporting documentation for the 2.22369 cents per kWh amount.

HELCO Response:

The value of 2.22369 (2006 cents/kWh) was obtained by converting the 2005 Variable Costs contained in the Unit Information Form (UIF) dated April 21, 2005 included in the filing as HELCO-WP-2012, page 85, to 2006 dollars. The GDP Deflator value for 2005 and 2006 respectively can be located in HELCO-WP-2012, page 44. The types of expenditures included in Variable O&M are: Scheduled and Preventative Maintenance, Supplies and Consumables, Chemical Treatment, Demineralization, and Fuel Oil Treatment.

CA-IR-445

Ref: HELCO-WP-2012, page 46; Customer Related Unit Costs.

- a. Please state whether the listed cost items are those which change as a direct result of adding a new customer and explain why only Meters, Services, Meter O&M, Service O&M, Customer accounting/service/sales expenses and related Working Capital are included as marginal customer costs.
- b. Are there any other marginal customer-related costs that increase directly whenever a new customer is added?

HELCO Response:

- a. The meter and services costs are typical installed costs by customer class as shown in HELCO-WP-2012, page 48. The meter O&M, services O&M, customer accounts expense, and customer service & information expenses are estimates of weighted expenses per customer as shown in HELCO-WP-2012, pages 49-61. These are the customer costs that are in marginal cost studies presented in past HECO, HELCO, and MECO rate cases. This is consistent with the NERA marginal cost methodology, which is the basis for HECO, HELCO, and MECO marginal cost studies.
- b. As indicated in the response to part a. above, only meters and services installed costs, meter O&M, services O&M, customer accounts expense, and customer service & information expenses are included in HELCO's method of calculating marginal customer cost. This is consistent with the NERA marginal cost methodology, which is the basis for HECO, HELCO, and MECO marginal cost studies.

CA-IR-446

Ref: HELCO-WP-2012, page 68; Distribution Facilities Unit Costs.

- a. Please explain which distribution facilities NARUC Accounts and which distribution O&M NARUC Accounts are included in the determination of Distribution costs that are treated by HELCO as marginal demand related costs on a per kW basis within page 62.
- b. State whether Mr. Young believes that this classification of costs is appropriate, even if it includes all distribution lines and transformers as a demand cost.

HELCO Response:

- a. Distribution facilities include accounts 365, 367, and 368. Distribution O&M includes accounts 580, 583, 584, 588, 590, 593, 594, 595, and 598 (see HELCO-WP-2012, page 71).
- b. This classification of costs is appropriate and consistent with the presentation of marginal costs in previous HECO, HELCO, and MECO rate cases.

CA-IR-447

Please identify, describe and quantify each element of the Company's asserted rate base, test year operating income, cost of capital, cost of service allocations or proposed rate design that HELCO intends to revise, update or otherwise modify. For each such element, provide complete copies of all relevant statistical and financial reports, calculations and workpapers for review by the Consumer Advocate in sufficient time for its analysis and the submission of information requests and responsive testimony addressing all such modifications.

HELCO Response:

HELCO has no revisions, updates or modifications in the area of T-2 Sales Forecast.

CA-IR-447

General Information Requests.

Please identify, describe and quantify each element of the Company's asserted rate base, test year operating income, cost of capital, cost of service allocations or proposed rate design that HELCO intends to revise, update or otherwise modify. For each such element, provide complete copies of all relevant statistical and financial reports, calculations and workpapers for review by the Consumer Advocate in sufficient time for its analysis and the submission of information requests and responsive testimony addressing all such modifications.

HELCO Response:

There are no changes or revisions from the T-3 testimony, exhibits and workpapers.

CA-IR-447

General Information Requests.

Please identify, describe and quantify each element of the Company's asserted rate base, test year operating income, cost of capital, cost of service allocations or proposed rate design that HELCO intends to revise, update or otherwise modify. For each such element, provide complete copies of all relevant statistical and financial reports, calculations and workpapers for review by the Consumer Advocate in sufficient time for its analysis and the submission of information requests and responsive testimony addressing all such modifications.

HELCO Response:

Based on the schedule in the Stipulated Prehearing Order No. 22903, the HELCO Rebuttal Testimony scheduled for March 9, 2007. In the Rebuttal Testimony, HELCO plans to update its test year estimates using an updated production simulation with the following revisions:

1. Current contract fuel prices effective November 1, 2006. This information is confidential and will be provided pursuant to Protective Order No. 22593, dated June 30, 2006;
2. Updated energy production for some of the wind and hydro units to incorporate actual 2006 data up to October 31st such that the five-year average for January through October would capture 2002 to 2006 data instead of 2001 to 2005 data for the Lalamilo Wind Farm, Waiau Hydro, Wailuku Hydro, and Other IPP Hydro;
3. Corrections described in HELCO Response to CA-IR-448.

Confidential Information Deleted
Pursuant to Protective Order No. 22593

The requested information is confidential and will be provided pursuant to Protective Order No. 22593, dated June 30, 2006.

Hawaii Electric Light Company, Inc.

**TEST YEAR 2006 DERIVATION OF
Lalamilo Wind Farm Net Generation (MWH)**

Update for Rebuttal Testimony

Month	2001	2002	2003	2004	2005	2006	2001-2005 (5-yr Ave)	2002-2006 (5-yr Ave)
January	108	77	42	58	20	76	61	54
February	110	184	125	75	177	59	134	124
March	159	110	71	113	116	32	114	88
April	264	46	156	135	208	166	162	142
May	141	74	130	125	138	110	122	115
June	100	197	139	201	0	111	127	130
July	184	197	173	206	205	106	193	177
August	234	173	246	165	156	94	195	167
September	229	143	102	122	161	78	151	121
October	249	159	92	105	162	8	153	105
November	146	141	152	73	87	NA	120	
December	186	104	134	108	70	NA	121	
Annual Total	2,110	1,605	1,561	1,485	1,499		1,652	

Hawaii Electric Light Company, Inc.

**TEST YEAR 2006 DERIVATION OF
HELCO Hydro Net Generation (MWH)**

Update for Rebuttal Testimony

Waiau Hydro

Month	2001	2002	2003	2004	2005	2006	2001-2005 (5-yr Ave)	2002-2006 (5-yr Ave)
January	235	309	77	270	591	166	296	283
February	356	-5	0	807	358	495	303	331
March	518	39	25	365	186	778	227	279
April	488	39	154	719	694	763	419	474
May	401	-6	183	634	430	701	329	389
June	305	-5	157	634	0	806	218	318
July	231	-6	225	619	243	706	262	357
August	763	-6	253	444	-2	761	291	290
September	549	-5	227	135	8	765	183	226
October	602	-5	160	323	399	742	296	324
November	504	-5	308	602	180	NA	318	NA
December	307	120	345	739	-4	NA	301	NA
Annual Total	5,259	463	2,113	6,291	3,084		3,442	

TOTAL HELCO HYDRO NET GENERATION (MWH)

Month	Puueo	Waiau 2001-2005	Waiau 2002-2006
January	1,422	296	283
February	1,535	303	331
March	1,577	227	279
April	2,565	419	474
May	2,502	329	389
June	1,301	218	318
July	1,424	262	357
August	2,000	291	290
September	1,840	183	226
October	1,854	296	324
November	1,665	318	NA
December	1,763	301	NA
Annual Total	21,449	3,442	

2001-2005 Total HELCO	2002-2006 Total HELCO
1,719	1,705
1,838	1,866
1,803	1,855
2,984	3,039
2,831	2,891
1,519	1,620
1,686	1,781
2,291	2,291
2,022	2,066
2,149	2,177
1,983	NA
2,064	NA
24,891	

Hawaii Electric Light Company, Inc.

**TEST YEAR 2006 DERIVATION OF
Non-Firm Purchased Power Energy (MWH)**

Update for Rebuttal Testimony

Wailuku River Hydro

Month	2001	2002	2003	2004	2005	2006	2001-2005 (5-yr Ave)	2002-2006 (5-yr Ave)
January	10	2,304	42	1,150	690	2,813	839	1,400
February	2,801	767	99	1,903	387	1,619	1,191	955
March	2,304	2,044	16	3,557	1,080	6,519	1,800	2,643
April	6,555	878	4,489	5,322	4,936	4,760	4,436	4,077
May	2,512	4,424	2,207	2,559	43	4,955	2,349	2,838
June	203	1,673	644	2,096	0	955	923	1,074
July	1,051	3,224	2,419	1,027	3,064	1,677	2,157	2,282
August	2,056	3,785	3,728	923	2,208	2,111	2,540	2,551
September	874	3,240	2,511	0	4,089	2,000	2,143	2,368
October	4,212	2,229	545	808	6,078	2,790	2,774	2,490
November	4,269	39	3,184	2,861	4,202	NA	2,911	NA
December	6,074	784	3,670	3,577	1,044	NA	3,030	NA
Annual Total	32,923	25,391	23,554	25,782	27,820		27,094	

Other IPP Hydro

Month	2001	2002	2003	2004	2005	2006	2001-2005 (5-yr Ave)	2002-2006 (5-yr Ave)
January	116	72	90	87	95	60	92	81
February	56	71	30	51	26	71	47	50
March	80	97	77	67	32	122	70	79
April	91	103	91	45	88	102	83	86
May	130	133	76	123	82	153	109	113
June	119	101	67	91	0	172	76	86
July	72	124	102	101	60	101	92	98
August	77	150	98	42	71	113	87	95
September	128	153	132	31	118	147	113	116
October	124	145	102	8	158	100	107	103
November	125	97	51	7	86	NA	73	NA
December	132	42	66	26	64	NA	66	NA
Annual Total	1,248	1,289	981	678	878		1,015	

CA-IR-447

Please identify, describe and quantify each element of the Company's asserted rate base, test year operating income, cost of capital, cost of service allocations or proposed rate design that HELCO intends to revise, update or otherwise modify. For each such element, provide complete copies of all relevant statistical and financial reports, calculations and workpapers for review by the Consumer Advocate in sufficient time for its analysis and the submission of information requests and responsive testimony addressing all such modifications

HELCO Response:

Adjustments to T-5 related expenses are summarized in Attachment CA-IR-447 (T-5) and referenced to each applicable IR for further discussion.

HAWAII ELECTRIC LIGHT COMPANY, INC.
TEST YEAR 2006 (\$1000s)

As Originally Filed

	<u>BUDGET</u>	<u>BUD ADJ</u>	<u>REVISED</u> <u>2006 OP</u> <u>BUDGET</u>	<u>NORM</u>	<u>DIRECT (A)</u>	<u>BUD ADJ</u> <u>10/06 (B)</u>	<u>(A) + (B)</u>
PRODUCTION O & M EXPENSE							
PRODUCTION OPER							
LABOR	6,054.3	0.0	6,054.3	0.0	6,054.3	(89.4)	5,964.9
NON-LABOR	3,526.6	200.0	3,726.6	(194.0)	3,532.6	7.0	3,539.6
TOTAL	9,580.8	200.0	9,780.8	(194.0)	9,586.8	(82.4)	9,504.4
PRODUCTION MAINT							
LABOR	3,228.6	0.0	3,228.6	0.0	3,228.6	(303.3)	2,925.3
NON-LABOR	10,492.7	(556.9)	9,935.8	289.0	10,224.8	(916.9)	9,307.9
TOTAL	13,721.3	(556.9)	13,164.4	289.0	13,453.4	(1,220.2)	12,233.2
PRODUCTION - TOTAL							
LABOR	9,282.9	0.0	9,282.9	0.0	9,282.9	(392.7)	8,890.2
NON-LABOR	14,019.2	(356.9)	13,662.3	95.0	13,757.3	(909.9)	12,847.4
TOTAL	23,302.1	(356.9)	22,945.2	95.0	23,040.2	(1,302.6)	21,737.6

Hawaii Electric Light Company Inc.
Rate Case Adjustments
Production

Description	Reason For Adjustment	IR Ref	Account Impacted	Hours	Direct Labor \$	NPW Rate	NPW \$	Total \$	Operations		Maintenance		
									Labor	Non-Labor	Labor	Non-Labor	
Adjustments that affect Production O&M													
1 Technical Supt position	Remove (total budgeted 2,205hrs less actual charged of 632)	IR-406	513220	2,205	(81.34)	4.3	(8.05)	(89.4)	(89.4)				
2 Hill Boiler Draw Engineering Doc	Cancel	IR-340, 77	512220	0	0	0	0	(83.7)				(83.7)	
3 CEMS	Underbudgeted	IR-63, 331	549290	0	0	0	0	256.3		256.3			
		IR-255,											
4 Disb Gen Unit Overhaul	Change in Scope	256	553410	0	0	0	0	(75.0)				(75.0)	
5 Outside Services - General	Error	IR-338	553310	0	0	0	0	(80.2)				(80.2)	
6 Diesel Engine Overhaul	One every other year	IR-255	553280	0	0	0	0	(155.0)				(155.0)	
7 Waiiau Penstock Repairs	Adjusted amounts to 2007	IR-64, 343	543240	0	0	0	0	(193.2)				(193.2)	
8 Puueo Penstock Repairs	Adjusted amounts to 2007	IR-64, 343	543230	0	0	0	0	(86.8)				(86.8)	
9 Outside Services - Legal	Overbudgeted Purchased Power	IR-80	557	0	0	0	0	(93.0)				(93.0)	
		IR-											
10 Labor	Capital hours unbudgeted	261,409	513220	0	0	0	0	(303.3)			(303.3)		
		IR-											
11 Hill 6 Blr VFD Upgrades	Completion moved to 2007	254,342	512220	0	0	0	0	(150.0)				(150.0)	
		IR-63, 66,											
12 Materials	Overbudgeted	334, 335	502230	0	0	0	0	(249.3)		(249.3)			
Total								(1,302.6)	(89.4)	7.0	(303.3)	(916.9)	
Adjustments that do not affect Production													
		Ptajioka IR-											
		447 p7 of											
13 Safety Costs	Overbudgeted	14	925	0	0	0	0	(73.0)					

aii Electric Light Company Inc.
Case Adjustment - Technical Supt position
Production Department
(\$ shown in thousands)

<u>Description</u>	<u>Reason For Adjustment</u>	<u>IR Ref</u>	<u>Hours</u>	<u>Direct Labor \$</u>	<u>NPW Rate</u>	<u>NPW \$</u>	<u>Total \$</u>
1 Technical Supt position	Remove (total budgeted 2,205hrs less actual charged of 632)	IR-406	2,205	81.34	4.3	8.05	89.4

Total hours budgeted	2,205	Per IR-1, Attachment 2, p.25
Total Productive Hours	1,873	Per IR-1, Attachment 2, p.25
Standard Labor Rate	\$ 36.89	
421 NPW Rate	\$ 4.30	
Net amount to be adjusted	<u>89.4</u>	

Hill Electric Light Company Inc.
Case Adjustment - Hill Boiler Draw Engineering Docs
Production Department
(\$ shown in thousands)

<u>Description</u>	<u>Reason For Adjustment</u>	<u>IR Ref</u>	<u>Hours</u>	<u>Direct Labor \$</u>	<u>IPW Rat</u>	<u>NPW \$</u>	<u>Total \$</u>
Hill Boiler Draw Engineering 2 Docs	Cancelled	IR-340, 77	-	-	-	-	(83.7)

Originally budgeted amount	150.0	Per HELCO-WP-510, p.2
Total amount normalized	66.3	Per HELCO-WP-510, p.3
Net amount to be adjusted	<u>83.7</u>	

Hawaii Electric Light Company Inc.
Use Adjustment - CEMS
ion Department
(shown in thousands)

Description	Reason For Adjustment	IR Ref	Hours	Direct Labor \$	NPW Rate	NPW \$	Total \$
3 CEMS	Underbudgeted	IR-63, 331	-	-	-	-	256.3

Updated budget amount 379.3 (A) see below
Total originally budgeted per CA-IR- 123.0 Per CA-IR-2, Attachment 1C, page 2
Net amount to be adjusted 256.3

CEMS recorded amounts through September - budgeted amounts through December						
Source: Piller RPTS-2006-Keahole.CTL						
Description	Recd Jan-06	Recd Feb-06	Recd Mar-06	Recd Apr-06	Recd May-06	Recd Jun-06
CEMS various	-	176,718	11,494	14,077	11,893	59,967

Description	Recd Jul-06	Recd Aug-06	Recd Sep-06	2008 FORECAST			Total
				Oct-06	Nov-06	Dec-06	
CEMS various	-	44,782	29,455	10,258	10,254	10,260	379,258 (A)

Subject: Re: Schedule for December
Brief outline of the test schedule for Hawaii:
December 3rd - Travel
December 4th - Setup for Flow Study and do 1 load test (75%), CT-2
December 5th - Do 3 load tests for Flow Study CT-2 (Peak....then 50%....then 25%)....Start flow test at 8:00, on site at 5am
December 6th - 25% load, start at 8:00 for CT-2 Compliance
December 7th - 50% load, start at 8:00 for CT-2 Compliance
December 8th - 75% load, start at 8:00 for CT-2 Compliance
December 11th - Peak load....early start time 4:00 am, test at 5:00 CT-2.
December 11th/12th - Move over to CT-4
December 12th - 25% load test for CT-4, start at 8:00.
December 13th - 50% load tests for CT-4, start at 8:00
December 14th - peak load test for CT-4, start at 8:00
December 14th/15th - Tear down from Unit CT-4/Pack-up/Ship samples and equipment
State agency notification - Begin testing on Units CT2/4 on December 6th with completion by December 15th anticipated.

Additional Information:
Hi Karle....tyl....Norman Verbanic has asked Tony to perform some additional testing on the units for the guys designing the new ST-7 unit at Keahole. I have a call into Tony to try and get a rough estimate for all the testing work. The scheduled work should run around between \$20,000 to \$25,000. thanks....don
From: ATMOS
Sent: Wednesday, October 18, 2006 9:07 AM
To: Yamamoto, Craig; Heinzen, Don; Verbanic, Norman; Dangelmaier, Lisa; Schlieman, Bruce; Bradley,
Subject: SO3 Testing
Aloha All:
Norman ask if we could accommodate some SO3 testing during the next round of source testing at Keahole. As you know we are scheduled to be back at Keahole on Dec. 4th. We are planning on starting with CT-2 the week of Dec. 4 and moving to CT-4 on Dec. 11. CUBIX feels confident that they can accommodate the SO3 testing for CT-4 while the source testing is going on. This will minimize the impact to system. The unit will only have to be dispatched at specific loads one at a time.
We would like to know if it is possible to perform the SO3 testing on CT-5 at the same time CT-2 is being tested? Each unit will need to run at a specific loads (25, 50, 75, and 100%) We could make sure that at no time will both units need to be ran and 100% or at 25%.
Also: I made the assumption that the test location would be at the top of the CT stack. Is this correct or will duct sampling also?

Electric Light Company Inc.
Case Adjustment - Disb Gen Unit Overhaul
Production Department
(\$ shown in thousands)

<u>Description</u>	<u>Reason For Adjustment</u>	<u>IR Ref</u>	<u>Hours</u>	<u>Direct Labor \$</u>	<u>NPW Rate</u>	<u>NPW \$</u>	<u>Total \$</u>
4 Disb Gen Unit Overhaul	Change in Scope	IR-255, 256	-	-	-	-	(75.0)

Updated budget	75.0	Refer to IR-255 and 256
Total originally budgeted	150.0	Per HELCO-WP-510, page 8
Net amount to be adjusted	<u>(75.0)</u>	

aii Electric Light Company Inc.
Case Adjustment - Outside Services - General
Production Department
(\$ shown in thousands)

<u>Description</u>	<u>Reason For Adjustment</u>	<u>IR Ref</u>	<u>Hours</u>	<u>Direct Labor \$</u>	<u>NPW Rate</u>	<u>NPW \$</u>	<u>Total \$</u>
5 Outside Services - Gener Error		IR-338	-	-	-	-	(80.2)

Correct amount	-	Refer to CA-IR-338
Total originally budgeted	80.2	CA-IR-2 (T-5), Attachment 2D; Outside Services
Net amount to be adjusted	<u>(80.2)</u>	

ail Electric Light Company Inc.
Case Adjustment - Diesel Engine Overhaul
Production Department
(\$ shown in thousands)

<u>Description</u>	<u>Reason For Adjustment</u>	<u>IR Ref</u>	<u>Hours</u>	<u>Direct Labor \$</u>	<u>NPW Rate</u>	<u>NPW \$</u>	<u>Total \$</u>
6 Diesel Engine Overhaul	One every other year	IR-255	-	-	-	-	(155.0)

Updated amount	195.0	Refer to CA-IR-255
Total originally budgeted	350.0	Per HELCO-WP-510, page 8
Net amount to be adjusted	<u>(155.0)</u>	

Waii Electric Light Company Inc.
Case Adjustment - Waiiau/Puueo Penstock Repairs
Production Department
(\$ shown in thousands)

<u>Description</u>	<u>Reason For Adjustment</u>	<u>IR Ref</u>	<u>Hours</u>	<u>Direct Labor \$</u>	<u>NPW Rate</u>	<u>NPW \$</u>	<u>Total \$</u>
	Adjusted amounts						
7 Waiiau Penstock Repairs	to 2007	IR-64, 343	-	-	-	-	(193.2)
	Adjusted amounts						
8 Puueo Penstock Repairs	to 2007	IR-64, 343	-	-	-	-	(86.8)

Correct amount	350.0	Refer to CA-IR-64 and 343
Total originally budgeted	350.0	CA-IR-64
Normalization over 5 years	70.0	Refer to CA-IR-343
Net amount to be adjusted	<u>280.0</u>	

aii Electric Light Company Inc.
Case Adjustment - Outside Services - Legal
Production Department
(\$ shown in thousands)

<u>Description</u>	<u>Reason For Adjustment</u>	<u>IR Ref</u>	<u>Hours</u>	<u>Direct Labor \$</u>	<u>NPW Rate</u>	<u>NPW \$</u>	<u>Total \$</u>
Overbudgeted							
9 Outside Services - Legal	Purchased Power	IR-80	-	-	-	-	(93.0)

Updated amount	157.0	Refer to CA-IR-80
Total originally budgeted	250.0	Per CA-IR-2 (T-5) Attachment 2I, page 2
Net amount to be adjusted	<u>(93.0)</u>	

ail Electric Light Company Inc.
Case Adjustment - Labor adjusted to capital
Production Department
(\$ shown in thousands)

<u>Description</u>	<u>Reason For Adjustment</u>	<u>IR Ref</u>	<u>Hours</u>	<u>Direct Labor \$</u>	<u>NPW Rate</u>	<u>NPW \$</u>	<u>Total \$</u>
10 Labor	Capital hours unbudgeted (3% of \$9.28M)	IR-261,409	-	-	-	-	(303.3)

Total labor dollars budgeted to O&M	\$9.28M	Per HELCO-WP-510, page 1
Less Technical Supt removal	\$0.0894M	Per support for adjustment 1
Average historical percent charged to capital	3.3%	Refer to CA-IR-261 and 409

Net amount to be adjusted	<u>\$ 303.3</u>
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Hill Electric Light Company Inc.
Case Adjustment - Hill 6 Blr VFD Upgrades
Production Department
(\$ shown in thousands)

<u>Description</u>	<u>Reason For Adjustment</u>	<u>IR Ref</u>	<u>Hours</u>	<u>Direct</u>		<u>NPW Rate</u>	<u>NPW \$</u>	<u>Total \$</u>
				<u>Labor \$</u>				
11 Hill 6 Blr VFD Upgrades	Completion moved to 2007	IR-254,342	-	-		-	-	(150.0)

Updated amount	-	Refer to CA-IR-342
Total originally budgeted	150.0	Refer to CA-IR-342
Net amount to be adjusted	<u>(150.0)</u>	

ail Electric Light Company Inc.
Case Adjustment - Materials
Production Department
(\$ shown in thousands)

<u>Description</u>	<u>Reason For Adjustment</u>	<u>IR Ref</u>	<u>Hours</u>	<u>Direct</u>		<u>NPW Rate</u>	<u>NPW \$</u>	<u>Total \$</u>
				<u>Labor \$</u>				
12 Materials (see below)	Overstated	IR-63, 66, 334, 335	-	-	-	-	-	(249.3)

Updated amount

66.2 Refer to CA-IR-63, 66, 334, 335

Total originally budgeted

315.5 Per CA-IR-2 (T-5) Attachment 2A; listed below

Net amount to be adjusted

(249.3)

a. HGH	242 RST	Blr Chem	\$	17,090
b. HGH	244 ANS	Lube Oil	\$	16,950
c. HGH	248 RST	Blr Chem	\$	68,330
d. HGK	244 BNS	Lube Oil	\$	21,390
e. HGK	244 CNS	Lube Oil	\$	24,180
f. HGK	248 CO2	Demin Chem	\$	1,210
g. HGK	248 CO4	Demin Chem	\$	16,920
h. HGK	248 CO5	Demin Chem	\$	8,260
j. HGP	248 PO1	Blr Chem	\$	66,320
k. HGP	248 PO3	Demin Chem	\$	8,630
			\$	<u>249,280</u>

aii Electric Light Company Inc.
Case Adjustment - Safety
Production Department
(\$ shown in thousands)

<u>Description</u>	<u>Reason For Adjustment</u>	<u>IR Ref</u>	<u>Hours</u>	<u>Direct Labor \$</u>	<u>NPW Rate</u>	<u>NPW \$</u>	<u>Total \$</u>
13 Safety	Overstated	IR-63, 66, 334, 335	-	-	-	-	(73.0)

Updated amount	90.0 IR-447 (P.Fujioka), page 7 of 14.
Total originally budgeted	163.0 IR-447 (P.Fujioka), page 7 of 14.
Net amount to be adjusted	<u>(73.0)</u>

Safety costs -- YTD Nov 2006 (excluding last week of November 2006) costs vs budget.
Updated estimate for 2006 is \$90,000 (compared to the 2006 original estimate of 163,008).

	YTD 11/30/06		
	<u>Actual</u>	<u>Budget</u>	<u>Variance</u>
GA	2,525	33,505	-30,980
GM	0	23,166	-23,166
CC	4,927	9,986	-5,059
GH	33,312	26,085	7,227
GP	23,438	13,833	9,605
GK	3,878	8,876	-4,998
GT	0	16,435	-16,435
GW	11,444	11,286	158
GX	2,426	3,746	-1,320
	81,950	146,918	-64,968

CA-IR-447

Please identify, describe and quantify each element of the Company's asserted rate base, test year operating income, cost of capital, cost of service allocations or proposed rate design that HELCO intends to revise, update or otherwise modify. For each such element, provide complete copies of all relevant statistical and financial reports, calculations and workpapers for review by the Consumer Advocate in sufficient time for its analysis and the submission of information requests and responsive testimony addressing all such modifications

HELCO Response:

For HELCO T-6 an adjustment to reduce the 2006 Test year expense for Transmission and Distribution by approximately \$131,606 will be made. This adjustment is the net of:

- increases for transformer mounting plate replacements \$62,065
- increase for manhole cover replacements \$ 5,872
- decreases for abandoned capital projects (\$ 92,459)
- decreases for not filling 4 trouble inspector positions (\$107,084)¹

Decrease in T&D Expense (\$131,606)

Page 6 of this response summarizes the adjustments by transmission and distribution block of accounts.

Transformer Mounting Plate replacements – In 2006, after the direct testimony was filed, HELCO began a program to replace transformer mounting plates that were prone to cracking. The problem with the plates was first discovered in 2005 and the program to identify suspect plates and replace them was implemented in mid-2006. The adjustment amount of \$62,065 represents the amount expected to be spent on this program in the 2006 test year. Mounting plates for approximately 160 transformer banks need replacement. HELCO anticipates the program will continue through 2011 at an approximate annual cost of \$100,000. Page 10 of this response

provides additional details for this adjustment. See also Attachment 1, which is the document used by HELCO inspectors as a guide for recognizing the plates that are prone to cracking. Attachment 2 provides a photo of a mounting plate that is cracked and needs to be replaced.

Manhole Cover Replacements – In 2006, after the direct testimony was filed, HELCO began a program to replace concrete manhole covers that have deteriorated causing potential hazards for employees and the public. The adjustment amount of \$5,872 represents the amount expected to be spent on this program in the 2006 test year. HELCO anticipates this program to continue indefinitely at an approximate annual cost of \$97,000. Page 10 of this response provides additional details for this adjustment. See also Attachment 3, page 1 which is the Significant Initiative Information Form that estimated the annual cost for manhole cover replacement at \$84,000 (note this estimate has since been revised to \$97,000). See also Attachment 3, page 2 which is a sample photo of a cover that needs replacement.

Abandoned Capital Projects – An adjustment of (\$92,459) is being made to the expenses related to abandoned capital projects. Part of the adjustment is an (\$86,000) overstatement that was discovered at the time the direct testimony was filed. See HELCO-602, page 2. Further adjustments of (\$6,459) were required as more information was obtained as 2006 progressed. Page 11 of this response provides additional details for this adjustment.

¹ In addition, A&G Accounts 925 (Insurance) and 926 (Employee Benefits) are adjusted by (\$5,744) and (\$2,872), respectively; total reduction including T&D expense of (\$115,700).

Trouble Inspector Positions – A total adjustment of (\$115,700), consisting of a (\$107,084) adjustment to T&D expense and (\$8,616) adjustment to A&G expense, is being made for the 4 trouble inspector positions that were forecasted for 2006. The 4 trouble inspector positions (2 Hilo and 2 Kona) were intended to expand coverage from 2 shifts 7 days per week to 3 shifts 7 days per week, as discussed in pages 64-66 of HELCO T-6. The positions have not been filled, as discussed below. The 2006 test year estimate anticipated hiring the 4 trouble inspectors in the second half of 2006 and included the expense for the 4 trouble inspectors for only 6 months of the test year. The adjustment of \$115,700 also reflects the expense for 4 trouble inspectors for 6 months of the test year.

HELCO actively recruited for these positions throughout 2006, but has not been successful in acquiring qualified journeyman linemen necessary for the positions. HELCO continues to recruit for the positions and still intends to expand coverage when these vacancies are filled but does not anticipate moving to expanded coverage in the 2006 test year. Therefore, the staffing count for the Distribution Department will remain the same though the cost for these four positions is being removed from the test year estimate. Page 10 of this response provides additional detail for this adjustment.

Adjustments for Safety Improvement Program

In 2006 HELCO implemented changes to the safety program in the Distribution Department to address a trend of increasing accidents and incidents that were occurring. A Safety Improvement Plan was developed to guide the changes. The estimated increase in annual costs as a result of the improvements is approximately \$400,000. Costs associated with these improvements affect the A&G block of accounts, specifically Account 925 Injuries and Damages and Account 926

Employee Pensions and Benefits. For the 2006 test year an increase of \$166,086 will be made to Account 92501, and an increase of \$238,712 will be made to Account 92606 related to the Safety Improvement Plan. The amount filed in Direct Testimony for Account 925 was \$289,512 and the amount for Account 926 in the Direct Testimony was \$269,317, for a total of \$558,829 for Distribution Department training. As of September 30, 2006 the amount expended in Account 925 was \$327,226 and the amount expended in Account 926 was \$489,299 for a total of \$816,535.

For block of accounts 925 the adjustment of \$166,086 is broken down as follows:

• Safety Recognition Program	\$49,094
• Driver Improvement Training	\$37,744
• Technical Division Supplemental Training	\$52,950
• Develop and Administer Additional Training	<u>\$26,298</u>
Increase in Account 925	<u>\$166,086</u>

For block of accounts 926 the adjustment of \$238,712 is broken down as follows:

• Overhead and Underground Training for C&M divisions	\$165,498
• Ladder Training	\$44,133
• Training Materials	<u>\$29,081</u>
Increase in Account 926	<u>\$238,712</u>

Further details for these adjustments are provided on page 11 of this response. A copy of the Safety Improvement Plan is provided as Attachment 4. A copy of the 2006 Safety Recognition Program, which is one component of the Safety Improvement Plan, is provided as Attachment 5. A copy of the 2006 C&M Overhead and Underground training schedule and sign up sheets, which is one component of the Safety Improvement Plan is provided as Attachment 6. A copy of the

President's Safety briefing, which is one component of the Safety Improvement Program, is provided as Attachment 7. (Eight slides related to personnel issues have not been included.) A copy of a Safety Audit report done by an independent company, which is another component of the Safety Improvement Program, is provided as Attachment 8. A copy of the Regulator Training and sign up sheets for C&M Divisions, which is part of the Overhead Training, is provided as Attachment 9. A course description for Major Substation Equipment Orientation, which is part of the Safety Improvement Program, is provided as Attachment 10. An exercise worksheet for the Safe Operation of Power Hydraulic Tools which is part of the Safety Improvement Program is provided as Attachment 11. A copy of the sign in document for the Safe Operation of Power Hydraulic Tools course is provided in Attachment 12. Sign in sheet for supplemental training for Working Near Energized Equipment and Hotstick Use is provided in Attachment 13. A copy of the sign in document for Supplemental Training for Fall Arrest and PPE and Emergency Procedures is provided in Attachment 14. The Course Description for Ladder Training is provided in Attachment 15, and the associated sign in document is provided in Attachment 16. Attachments 4, 6 – 9, 11 – 16 are confidential and will be provided pursuant to Protective Order No. 22593, issued June 30, 2006.

The adjustments to Accounts 925 and 926 are needed to fund the Safety Improvements that are necessary to enhance employee safety and reduce the likelihood of accidents and injury. HELCO has already taken steps and incurred additional expense above and beyond the Direct Testimony estimate in 2006 to implement the Safety Improvement Plan. An independent Safety Audit of HELCO's Distribution Department Safety practices was done in 2006 and the audit report supports HELCO's efforts to enhance safety.

Hawaii Electric Light Company, Inc.

2006 TEST YEAR

TRANSMISSION AND DISTRIBUTION
OPERATIONS & MAINTENANCE EXPENSE
(\$000K)

	(A)	(B)	(C)	(D)	(E)	(F)
<u>line</u>	<u>BUDGET</u>	<u>BUD ADJ</u>	<u>NORM</u>	<u>2006 TEST YEAR</u>	<u>10/06 BUD ADJ</u>	<u>Revised Test Year</u>
1 Transmission O&M Expense	\$ 2,387	\$ 14	\$ -	\$ 2,401	\$ (16)	\$ 2,385
2 Distribution O&M Expense	6,447	151	-	6,598	(116)	6,482
3 TOTAL	<u>\$ 8,834</u>	<u>\$ 165</u>	<u>\$ -</u>	<u>\$ 8,999</u>	<u>\$ (132)</u>	<u>\$ 8,867</u>

Source

Column A-D: HELCO-602, Page 1 of 5.
Column E: CA-IR-447 (T-6), Pages 7-12.

Hawaii Electric Light Company, Inc.
2006 TEST YEAR

CA-IR-447 (T-6)
DOCKET NO. 05-0315
PAGE 7 OF 12

TRANSMISSION ADJUSTMENTS
OPERATIONS & MAINTENANCE EXPENSE

<u>TRANSMISSION OPERATIONS</u>		<u>Note</u>
LABOR		
Reduction of four 24 hour troublemen inspectors forecasted to start July 2006, Account 563.	\$ (2,739.0)	A1
SUB-TOTAL	<u>\$ (2,739.0)</u>	
NON-LABOR		
Reduction of four 24 hour troublemen inspectors forecasted to start July 2006, Account 563.	\$ (2,551.0)	A1
Adjustment for abandoned capital project costs written off to O&M expense, account 566. (Note: original increase of \$152,000 was overstated by \$86,000 as stated on HELCO-602, page 2 of 5.	(97.0)	A2
Adjustment for abandoned capital project costs written off to O&M expense, account 560. (Note: original increase of \$152,000 was overstated by \$86,000 as stated on HELCO-602, page 2 of 5.	(4,614.0)	A3
Adjustment for abandoned project amount normalized CA-IR-273, page 2 of 3. (Note: Aina Lea Golf Res Comm Project and Prelim Matls China US Center), account 566.	(7.0)	A2
Adjustment for abandoned project amount normalized CA-IR-273, page 2 of 3. (Note: Aina Lea Golf Res Comm Project and Prelim Matls China US Center), account 560.	(347.0)	A3
SUB-TOTAL	<u>\$ (7,616.0)</u>	
TOTAL TRANSMISSION OPERATIONS	<u>\$ (10,355.0)</u>	
<u>TRANSMISSION MAINTENANCE</u>		
LABOR		
Reduction of four 24 hour troublemen inspectors forecasted to start July 2006, Account 571.	\$ (2,974.0)	B1
SUB-TOTAL	<u>\$ (2,974.0)</u>	
NON-LABOR		
Reduction of four 24 hour troublemen inspectors forecasted to start July 2006, Account 571.	\$ (2,769.0)	B1
SUB-TOTAL	<u>\$ (2,769.0)</u>	
TOTAL TRANSMISSION MAINTENANCE	<u>\$ (5,743.0)</u>	
GRAND TOTAL TRANSMISSION O&M	<u><u>\$ (16,098.0)</u></u>	

Source

CA-IR-447 (T-6), pages 10-11 for detail of amounts for Notes A to B.

Hawaii Electric Light Company, Inc.
2006 TEST YEAR

DISTRIBUTION ADJUSTMENTS
OPERATIONS & MAINTENANCE EXPENSE

<u>DISTRIBUTION OPERATIONS</u>		<u>NOTE</u>
LABOR		
Reduction of four 24 hour troublemen inspectors forecasted to start July 2006, Account 583.	\$ (9,313.0)	C1
Reduction of four 24 hour troublemen inspectors forecasted to start July 2006, Account 586.	\$ (8,100.0)	F1
SUB-TOTAL	<u>\$ (17,413.0)</u>	
NON-LABOR		
Reduction of four 24 hour troublemen inspectors forecasted to start July 2006, Account 583.	\$ (8,673.0)	C1
Adjustment for abandoned capital project costs written off to O&M expense, account 586. (Note: original increase of \$152,000 was overstated by \$86,000 as stated on HELCO-602, page 2 of 5.	(848.0)	C2
Adjustment for abandoned project amount normalized CA-IR-273, page 2 of 3. (Note: Aina Lea Golf Res Comm Project and Prelim Matls China US Center), account 586.	(64.0)	C2
Adjustment for abandoned capital project costs written off to O&M expense, account 588. (Note: original increase of \$152,000 was overstated by \$86,000 as stated on HELCO-602, page 2 of 5.	(9,777.0)	C3
Adjustment for abandoned project amount normalized CA-IR-273, page 2 of 3. (Note: Aina Lea Golf Res Comm Project and Prelim Matls China US Center), account 588.	(734.0)	C3
Adjustment for abandoned capital project costs written off to O&M expense, account 580. (Note: original increase of \$152,000 was overstated by \$86,000 as stated on HELCO-602, page 2 of 5.	(70,664.0)	C4
Adjustment for abandoned project amount normalized CA-IR-273, page 2 of 3. (Note: Aina Lea Golf Res Comm Project and Prelim Matls China US Center), account 580.	(5,307.0)	C4
Reduction of four 24 hour troublemen inspectors forecasted to start July 2006, Account 586.	(7,543.0)	F1
SUB-TOTAL	<u>\$ (103,610.0)</u>	
TOTAL DISTRIBUTION OPERATIONS	<u><u>\$ (121,023.0)</u></u>	

Source:

CA-IR-447, pages 10-11 for detail of amounts for Notes C and F.

Hawaii Electric Light Company, Inc.

2006 TEST YEAR

DISTRIBUTION ADJUSTMENTS
OPERATIONS & MAINTENANCE EXPENSE

<u>DISTRIBUTION MAINTENANCE</u>		<u>NOTE</u>
LABOR		
Reduction of four 24 hour troublemen inspectors forecasted to start July 2006, Account 593.	\$ (30,209.0)	D1
New Manhole Cover Replacement Project proposed over the next 5 years. 2007-2011 \$100K per year, Account 594.	1,174.0	D2
New Transformer Bracket Replacement Project proposed over the next 5 years (2007-2011 \$100K), Account 593.	30,052.0	D3
Reduction of four 24 hour troublemen inspectors forecasted to start July 2006, Account 598.	(2,113.0)	E1
SUB-TOTAL	\$ (1,096.0)	
NON-LABOR		
Reduction of four 24 hour troublemen inspectors forecasted to start July 2006, Account 593.	\$ (28,132.0)	D1
New Manhole Cover Replacement Project proposed over the next 5 years. 2007-2011 \$100K per year, Account 594.	4,698.0	D2
New Transformer Bracket Replacement Project proposed over the next 5 years (2007-2011 \$100K), Account 593.	32,013.0	D3
Reduction of four 24 hour troublemen inspectors forecasted to start July 2006, Account 598.	(1,968.0)	E1
SUB-TOTAL	\$ 6,611.0	
TOTAL DISTRIBUTION MAINTENANCE	\$ 5,515.0	
GRAND TOTAL DISTRIBUTION O&M	\$ (115,508.0)	

Source:

CA-IR-447, pages 10-11 for detail of amounts for Notes D to E.

Hawaii Electric Light Company Inc.
Rate Case Adjustments
Transmission and Distribution

Description	Reason For Adjustment	Account Impacted	Activity	Hours	Labor				NOTES	Non-Labor			Stores		Contract	Meals &	NOTES	Total \$	RA		
					Direct Labor \$	NPW Rate	NPW \$	Subtotal		Energy Delivery Rate	Energy Delivery \$	EE201	Stores Loading	Stores Loading \$	Services	Entertainment					
																				EE150	EE421
1 Reduction of the 4 proposed new hire 24 hour troublemen inspectors (2 Hilo and 2 Kona). Forecasted to start July 2008.	Reduction of four 24 hour troublemen inspectors for labor class Dcrew.	926	789	(15)	(522)	4.30	(85)	(587)	A&G Oper	36.44	(547)						(547)	A&G Oper	(1,134)	HDH	
		925	797	(38)	(1,324)	4.30	(163)	(1,487)	A&G Oper	36.44	(1,385)						(1,385)	A&G Oper	(2,872)	HDH	
		563	328	(15)	(522)	4.30	(65)	(587)	A1	36.44	(547)						(547)	A1	(1,134)	HDH	
		571	355	(61)	(2,125)	4.30	(262)	(2,387)	B1	36.44	(2,223)						(2,223)	B1	(4,610)	HDH	
		583	458	(131)	(4,563)	4.30	(563)	(5,126)	C1	36.44	(4,774)						(4,774)	C1	(9,900)	HDH	
		593	473	(161)	(5,606)	4.30	(692)	(6,300)	D1	36.44	(5,867)						(5,867)	D1	(12,167)	HDH	
		593	475	(85)	(2,961)	4.30	(366)	(3,326)	D1	36.44	(3,097)						(3,097)	D1	(6,423)	HDH	
		598	492	(54)	(1,881)	4.30	(232)	(2,113)	E1	36.44	(1,968)						(1,968)	E1	(4,061)	HDH	
		593	494	(106)	(3,762)	4.30	(464)	(4,226)	D1	36.44	(3,936)						(3,936)	D1	(8,162)	HDH	
		586	602	(100)	(3,483)	4.30	(430)	(3,913)	F1	36.44	(3,644)						(3,644)	F1	(7,557)	HDH	
					(768)		(26,749)		(3,302)	(30,052)		(27,986)	-	-	-	-	-	(27,986)		(58,038)	
		926	789	(23)	(801)	4.30	(99)	(900)	A&G Oper	36.44	(838)						(838)	A&G Oper	(1,738)	HDK	
		925	797	(38)	(1,324)	4.30	(163)	(1,487)	A&G Oper	36.44	(1,385)						(1,385)	A&G Oper	(2,872)	HDK	
		563	328	(55)	(1,916)	4.30	(237)	(2,152)	A1	36.44	(2,004)						(2,004)	A1	(4,156)	HDK	
		571	355	(15)	(522)	4.30	(65)	(587)	B1	36.44	(547)						(547)	B1	(1,134)	HDK	
		583	458	(107)	(3,727)	4.30	(460)	(4,187)	C1	36.44	(3,899)						(3,899)	C1	(8,086)	HDK	
		593	473	(31)	(1,060)	4.30	(133)	(1,213)	D1	36.44	(1,130)						(1,130)	D1	(2,343)	HDK	
		593	475	(334)	(11,633)	4.30	(1,436)	(13,069)	D1	36.44	(12,171)						(12,171)	D1	(25,240)	HDK	
		593	494	(53)	(1,846)	4.30	(228)	(2,074)	D1	36.44	(1,931)						(1,931)	D1	(4,005)	HDK	
		586	602	(107)	(3,727)	4.30	(460)	(4,187)	F1	36.44	(3,899)						(3,899)	F1	(8,086)	HDK	
					(763)		(26,575)		(3,281)	(29,856)		(27,804)	-	-	-	-	-	(27,804)		(57,660)	
			2 New Manhole Cover Replacement Project proposed over the next 5 years. 2007-2011 \$100K.	594	476	30	1,045	4.30	129	1,174	D2	-	-	4,200	0.1185	498	-	-	4,698	D2	5,872
3 New Transformer Bracket Replace (4 hrs x 8 men DCREW x 24 banks= Project proposed over the next 5 years 768 hrs) 2007-2011 \$100K.		595	479	270	9,404	4.30	1,161	10,565	D3	36.44	9,839	1,264	0.1185	150	-	-	11,253	D3	21,818	HDH	
		595	479	249	8,673	4.30	1,071	9,743	D3	36.44	9,074	1,168	0.1185	138	-	-	10,380	D3	20,123	HDK	
		595	479	249	8,673	4.30	1,071	9,743	D3	36.44	9,074	1,168	0.1185	138	-	-	10,380	D3	20,123	HDV	
				768	26,749		3,302	30,052			27,986	3,600		427	-	-	32,013		62,064		
4 Blank Space				-	-	-	-	-	36.44	-	-	-	-	-	-	-	E1	-			
5 Blank Space		932	932	-	-	4.30	-	-	A&G Maint	36.44	-	-	-	-	-	-	A&G Maint	-			
Subtotal of Page 1 Adjustments					(733)	(25,530)	(3,152)	(28,682)		(27,804)	7,800		924	-	-	-	(19,079)		(47,762)		

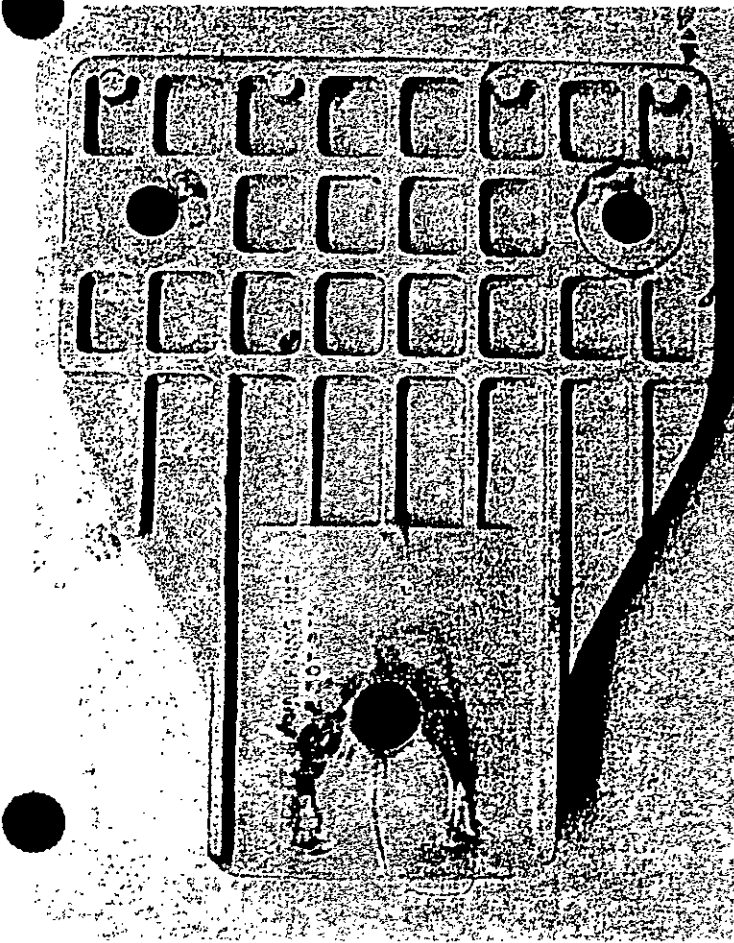
Hawaii Electric Light Company Inc.
Rate Case Adjustments
Transmission and Distribution

Description	Reason For Adjustment	Account Imputed	Activity	Hours	Labor		Energy		NOTES	Non-Labor		Subtotal	Subtotal	NOTES	Total \$	BA					
					Direct Labor \$ EE-150	NPV Rate EE-21	Delivery Rate EE-04	Energy Delivery Rate EE-04		Stores Loading Rate EE-01	Contract Services EE-01						Meals & Entertainment EE-01				
6 Additional Proposed Safety Breakfast Program. An award for excellent safety.	Includes the time to attend the breakfast and the meal. (98 empl. x 4 qtrs x \$14.00 = \$5,488) Meals (Time to set the meal based on 98 empl. x 4 qtrs x 1.5 hrs = 584 hours)	925	797	150	4,395	4.30	36.44	36.44	ALG Oper	36.44	36.44	5,488	8,888	ALG Oper	11,008	HOC					
		925	797	192	6,887	4.30	36.44	36.44	ALG Oper	36.44	36.44	1,792	8,788	ALG Oper	16,301	HOC					
		925	797	150	5,725	4.30	36.44	36.44	ALG Oper	36.44	36.44	1,400	8,888	ALG Oper	12,798	HOK					
		925	797	584	19,651	4.30	36.44	36.44	ALG Oper	36.44	36.44	5,488	20,915	ALG Oper	49,094	HOW					
7 Additional Safety Training for Driver Improvement Program	(21 Empl. TECHCREW x 1 hrs = 21 HRS) (80 empl. DCREW x 8 hrs = 640 HRS)	925	797	21	615	4.30	36.44	36.44	ALG Oper	36.44	36.44	785	785	ALG Oper	1,471	HOC					
		925	797	232	8,081	4.30	36.44	36.44	ALG Oper	36.44	36.44	8,454	8,454	ALG Oper	17,532	HOC					
		925	797	144	5,016	4.30	36.44	36.44	ALG Oper	36.44	36.44	5,247	5,247	ALG Oper	10,882	HOK					
		925	797	104	3,622	4.30	36.44	36.44	ALG Oper	36.44	36.44	3,790	3,790	ALG Oper	7,859	HOW					
		925	797	501	17,334	4.30	36.44	36.44	ALG Oper	36.44	36.44	18,256	18,256	ALG Oper	37,744	HOC					
8 Technical Supplemental Training Program	(21 Empl. TECHCREW x 3 hrs x 12 mo = 756 HRS)	925	797	756	22,151	4.30	36.44	36.44	ALG Oper	36.44	36.44	27,549	27,549	ALG Oper	52,650	HOC					
9 Develop Safety & Administer Training	(348 HRS. DCREW to develop training)	925	795	348	12,121	4.30	36.44	36.44	ALG Oper	36.44	36.44	12,881	12,881	ALG Oper	26,288	HOW					
10 Additional Technical Training for Overhead and Underground Lines	(73 empl. DCREW x 15 hrs x 2 = 2190 HRS)	926	789	900	33,437	4.30	36.44	36.44	ALG Oper	36.44	36.44	34,962	34,962	ALG Oper	72,547	HOK					
		926	789	750	26,123	4.30	36.44	36.44	ALG Oper	36.44	36.44	27,330	27,330	ALG Oper	56,878	HOK					
		926	789	480	16,718	4.30	36.44	36.44	ALG Oper	36.44	36.44	17,491	17,491	ALG Oper	36,774	HOW					
		926	789	2,180	78,278	4.30	36.44	36.44	ALG Oper	36.44	36.44	78,864	78,864	ALG Oper	165,488	HOC					
11 Ladder Training	(73 empl. DCREW x 8 hrs = 584 HRS)	926	789	258	8,916	4.30	36.44	36.44	ALG Oper	36.44	36.44	9,329	9,329	ALG Oper	19,348	HOK					
		926	789	200	6,968	4.30	36.44	36.44	ALG Oper	36.44	36.44	7,288	7,288	ALG Oper	15,114	HOK					
		926	789	128	4,458	4.30	36.44	36.44	ALG Oper	36.44	36.44	4,684	4,684	ALG Oper	8,673	HOW					
		926	786	584	20,341	4.30	36.44	36.44	ALG Oper	36.44	36.44	21,281	21,281	ALG Oper	44,133	HOW					
12 Training Materials	2007 - 2009 Job Related Training Materials	926	786	-	-	4.30	-	-	ALG Oper	36.44	0.1185	3,081	29,081	ALG Oper	29,081	HOK					
13 Abandoned capital project costs written off to O&M expense.	\$ (80,000)	596	307	-	-	4.30	-	-	A2	36.44	-	(87)	(87)	A2	(87)	HOW					
		596	307	-	-	4.30	-	-	A3	36.44	-	(4,814)	(4,814)	A3	(4,814)	HOW					
		596	307	-	-	4.30	-	-	C2	36.44	-	(848)	(848)	C2	(848)	HOW					
		596	408	-	-	4.30	-	-	C3	36.44	-	(9,777)	(9,777)	C3	(9,777)	HOW					
		596	408	-	-	4.30	-	-	C4	36.44	-	(51,573)	(51,573)	C4	(51,573)	HOW					
		596	408	-	-	4.30	-	-	C4	36.44	-	(19,091)	(19,091)	C4	(19,091)	HOW					
		596	408	-	-	4.30	-	-	C4	36.44	-	(86,000)	(86,000)	C4	(86,000)	HOW					
14 Abandoned project amount normalized	(Alma Lee Golf Res Course Project \$16,801) (Pulaski Math Course Project - \$15,488) (\$16,801 - \$15,488 = \$1,313) (6,459)	596	307	-	-	4.30	-	-	A2	36.44	-	(7)	(7)	A2	(7)	HOW					
		596	307	-	-	4.30	-	-	A3	36.44	-	(247)	(247)	A3	(247)	HOW					
		596	307	-	-	4.30	-	-	C2	36.44	-	(64)	(64)	C2	(64)	HOW					
		596	408	-	-	4.30	-	-	C3	36.44	-	(734)	(734)	C3	(734)	HOW					
		596	408	-	-	4.30	-	-	C4	36.44	-	(3,873)	(3,873)	C4	(3,873)	HOW					
		596	408	-	-	4.30	-	-	C4	36.44	-	(1,434)	(1,434)	C4	(1,434)	HOW					
		596	408	-	-	4.30	-	-	C4	36.44	-	(6,459)	(6,459)	C4	(6,459)	HOW					
Subtotal of Page 2 Adjustments																	160,907	26,000	3,081	192,450	123,108
																	4,067	167,874	21,358	189,222	312,540

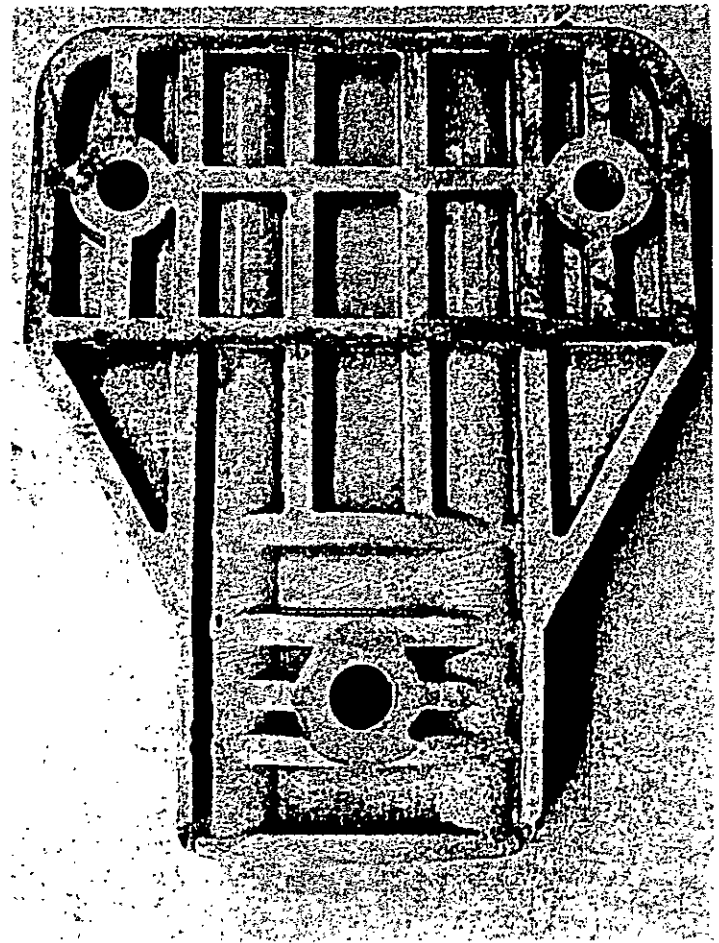
Description	Account Impacted	Activity	Labor			Non-Labor			Subtotal	NOTES	Entertainment			Subtotal	NOTES	Total \$	RA		
			Hours	Direct Labor \$ EE150	NPW Rate EE421	NPW \$	Deliveries Rate EE404	Energy Deliveries EE404			Stores Loading Rate EE401	Stores Loading & EE401	Contract Services EE501					Meals & Entertainment EE521	EE900
Sum of Letter A1-A3:																			
Transmission Operations			(70)	(2,438)		(301)	(2,739)							(5,085)	(7,816)	(10,355)			
Transmission Maintenance			(78)	(2,847)		(327)	(2,914)							(5,743)	(2,769)	(5,743)			
Sum of Letter C1-C4:			(238)	(8,290)		(1,023)	(9,313)							(87,394)	(99,067)	(105,380)			
Distribution Operations			28	906		112	1,017							8,579	8,579	9,596			
Distribution Maintenance			(54)	(1,881)		(232)	(2,113)							(1,968)	(4,081)	(4,081)			
Sum of Letter E1:			(207)	(7,210)		(690)	(7,543)							(7,543)	(15,643)	(15,643)			
Sum of Letter F1:																			
Distribution Operations			4,853	183,904		20,868	184,772							5,488	211,412	399,184			
Sum of A&G Maintenance			4,234	142,344		18,206	160,550							5,488	(92,459)	264,578			
Grand Total of All Adjustments			4,234	142,344		18,206	160,550							5,488	(92,459)	264,578			

Grand Total of All Adjustments

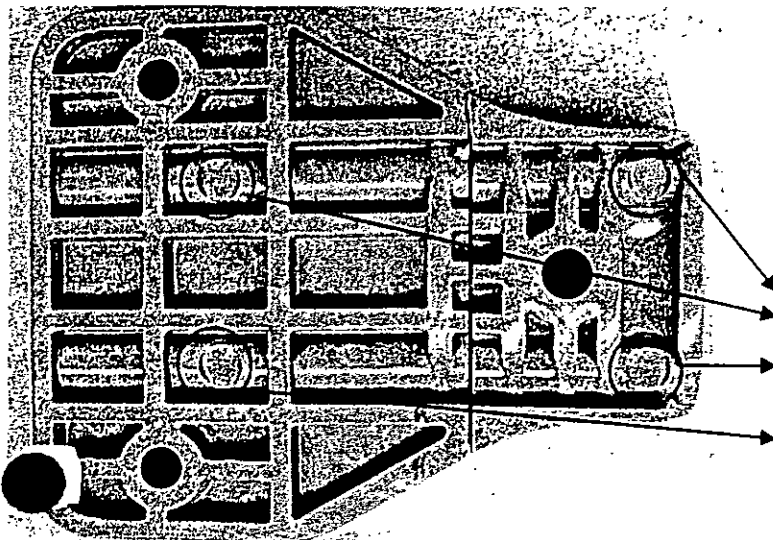
Transformer Plate Identification



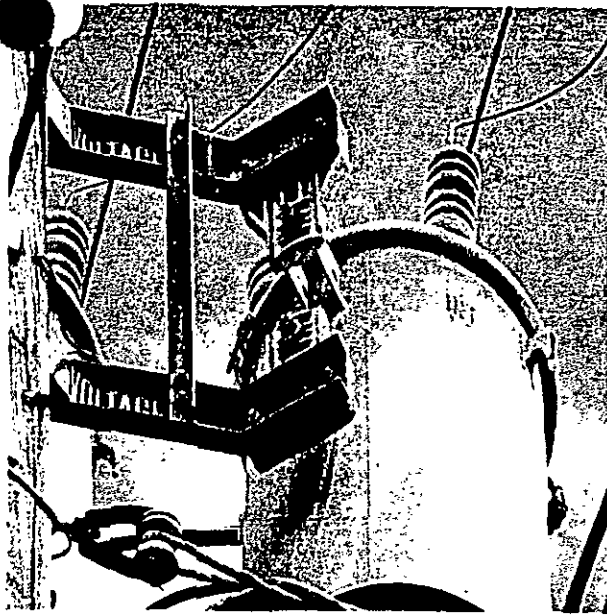
The above picture is a picture of the fiber plate that was made prior to 1987. This plate has two steel rods in the fiber pad for re-enforcement.



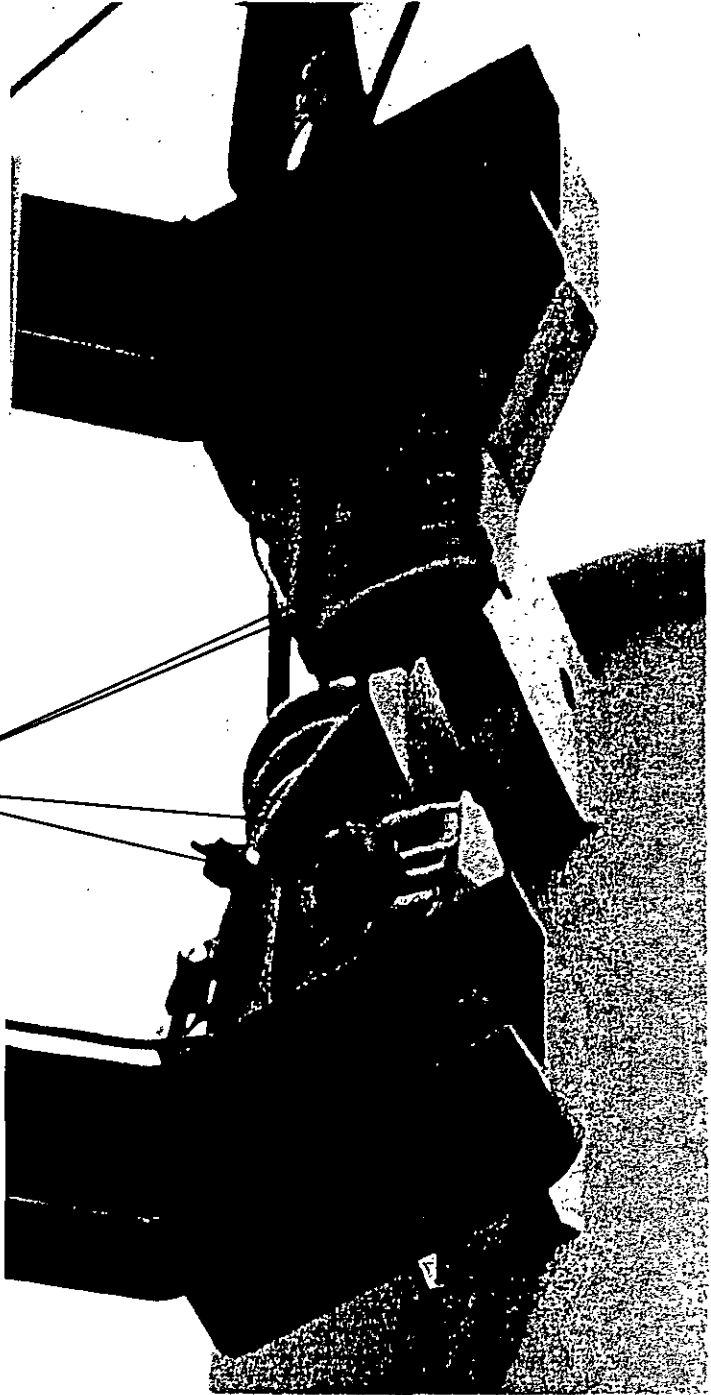
The above picture is a picture of the fiber plate that was made between the years 1987 to 1993. This plate does not have any steel rods in the fiber pad for re-enforcement.

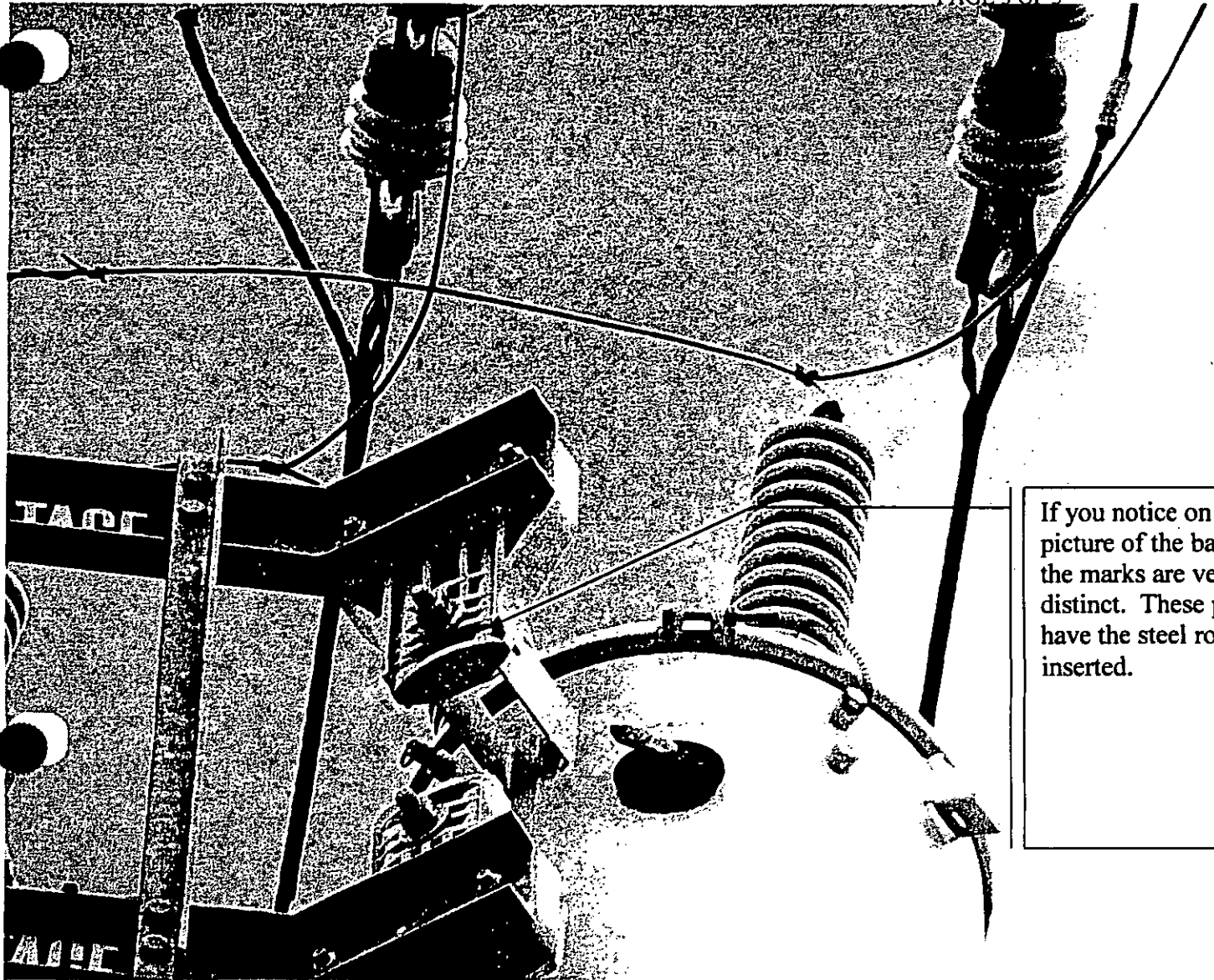


The picture to the left is a picture of the fiber plate that was made after 1993. This plate has two steel rods in the fiber pad for re-enforcement. When you compare this picture to the picture above there are some distinct marks that are indication that the pad has the steel rods inserted in the plates. You can see that there is an insert in four places on both sides of the plate.



If you notice the picture to the left
there are no inserts in the area where
the arrow is pointing indicating that
there are no steel rods inside of the
fiber plates.

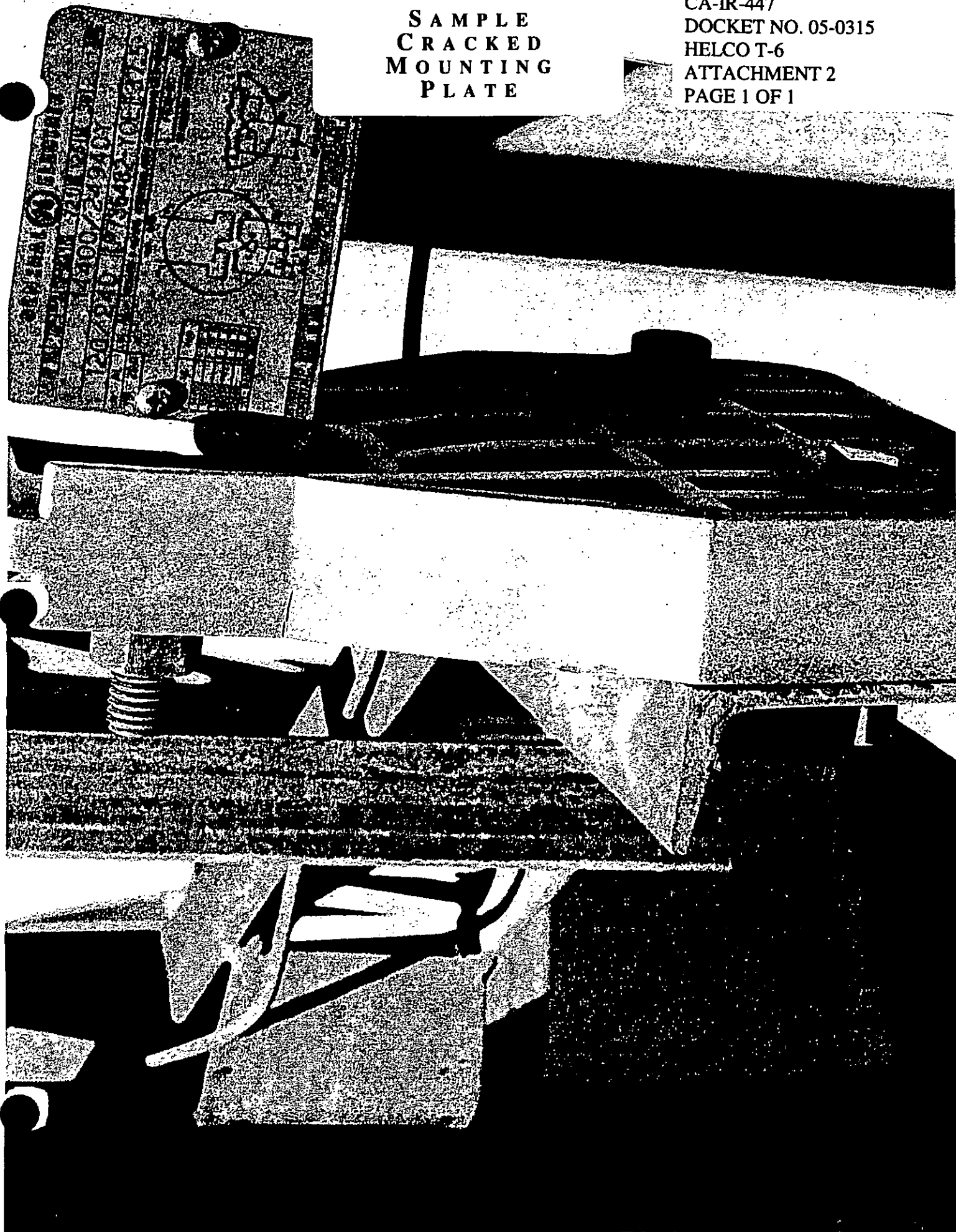




If you notice on this picture of the bank the marks are very distinct. These plates have the steel rods inserted.

SAMPLE
CRACKED
MOUNTING
PLATE

CA-IR-447
DOCKET NO. 05-0315
HELCO T-6
ATTACHMENT 2
PAGE 1 OF 1



HAWAII ELECTRIC LIGHT COMPANY, INC.
Significant Initiative Information Form
Non-Capital Projects and Non-Capital Programs
Non-Projects and Non-Programs

CA-IR-447
DOCKET NO. 05-0315
HELCO T-6
ATTACHMENT 3
PAGE 1 OF 2

Title: Jpayne22 Waikoloa Manhole Cover Replacement

Reason/Need: To replace Manhole Covers. Existing manhole covers pose a safety risk to the public and HELCO employees. Existing manhole covers are deteriorating and posing a trip and fall risk to the public who walk frequently in the area. The manhole covers pose a risk to HELCO personnel who need to resort to a non-approved work method to gain access to the manholes.

Work Scope/Description: To replace 8 covers per year.

Resource needs:

Cost Estimate: \$84K \$84K
 Year 2007 Year 2008


Schedule: From: Jan. 2007 To: Dec. 2008
[Provide estimated start and end dates] (month/year) (month/year)

Priority Rating: -30

Issues, Impacts and Considerations:

Initiator: Curtis Vana

Sponsor: Jay Ignacio

 5/10/06

**SAMPLE
MANHOLE
COVER**

CA-IR-447
DOCKET NO. 05-0315
HELCO T-6
ATTACHMENT 3
PAGE 2 OF 2



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HELCO Distribution Department
Safety Improvement Employee Recognition Program
May 4, 2006

The Distribution Department at HELCO will be adapting a Recognition Program for employees who demonstrate safe behaviors in the work place.

Each Division within the Department will be divided into teams of 4 to 5 members. For teams that experience no lost time accident, no preventable accidents or incidents, and no safety violations during a 3 month period, they will qualify for a safety breakfast.

The program will begin June 1, 2006. The first period of the program will end August 31, 2006. For those employees who qualify for a breakfast, the breakfast will be held no later than September 30, 2006. For those who qualify and are unable to attend, a certificate of equivalent value will be provided.

The second period will be from September 1, 2006 to November 30, 2006. Those who qualify for a breakfast, the breakfast will be held no later than December 31, 2006.

The program will be re-evaluated at the end of the second period for effectiveness and consideration of any changes for improvement.

The teams will be selected by random drawing. Division supervisors will be included as team members.

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Major Substation Equipment Orientation

Intent: To familiarize workers with basic operation/functions of major equipment and major elements they will be installing/maintaining. Do not have to go deep into controls, settings, etc. Just cover major items.

Equipment:

- Regulator
- Transformer
- Transmission Breaker
- Distribution Breaker
- Recloser
- Batteries/charger

Method: We will meet at equipment as a group where a short explanation of operation. Then major components of the equipment will be pointed out before moving to next equipment. Schedule attached.

Transformer

Theory: Nameplate explanation – wye-delta configuration and which bushings windings brought out to, voltage ratings and how they correspond to no-load tap changer positions and LTC position, importance of grounding neutral and why voltage on return conductor gets elevated under open neutral condition.

Components: Nameplate, primary and secondary bushings, primary tap changer, LTC, pressure relief valve, fault pressure relay, and gauges.

Regulator

Theory: Explain how a regulator tries to maintain voltages within tariff. Nameplate explanation of different voltages regulator can operate at and changes that needs to be made to operate at these voltages, effect of circulating currents when trying to open a bypass switch when regulator not on neutral position.

Component: Windings, potential transformer, motor operator, controls, neutral position indicators.

Transmission Breaker – OCB

Theory: Solid contact with oil serving as insulator. Explain how contact is made/broken within a OCB, various types of operators. Can't think of hazards except blown bushings.

Components: Operator, tanks, linkages, oil level gauge, status indicators, controls, CT locations, air compressor.

Transmission Breaker – SF6

Theory: Contacts, insulating gas. Cover dangers of opening breaker when low SF6. Also safeties as pulling control fuses.

Components: Operator, poles, bushings, control cabinet, compressor, spring charging, gas manifold, fill ports, pressure switches, CT locations.

Distribution Breaker

Theory: Explain hazards when racking out or in. Safeties such as discharging spring, pulling control fuses.

Components: Racking mechanism, closing and tripping coils, limit switches, vacuum bottle, springs, spring charging motor, controls.

Recloser

Theory: Vacuum bottle in oil, contacts in oil, operators.

Components: Bushings, external CTs, vacuum bottles, trip/lockout lever, status indicator, controls, control cable.

Batteries

Theory: Hazards from explosions and chemical contact. Also hazard of contact with terminals.

Components: Batteries, connection links, electrode.

Charger

Theory: Input/output voltage, rectifier, control of voltage, equalize, float charge.

Components: Charger, gauges.

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